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Editors

EXPLORING IMPACTS OF COLLECTIVE AWARENESS PLATFORMS FOR SUSTAINABILITY AND SOCIAL INNOVATION



political



social



economic



environmental

Euroklis Press

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AND SOCIAL INNOVATION**

Frankleis Press

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Foreword

Collective Awareness Platforms for social innovation and sustainability is more than € 50 million EC initiative which over five years promotes a collaborative economy based on collective intelligence and 'bottom-up' citizen engagement platforms (as opposed to traditional top-down or push-based technology approaches). All CAPS platforms are developed as open source. Most deploy low-cost open hardware (e.g. Arduino boards, Raspberry Pi). Today over 33 CAPS community pilots are busy sharing data and solving everyday problems with collective intelligence and digital network setups. They are innovative in the 'social innovation' sphere. They seek crowdsourced and crowdfunded solutions to sustain local communities' development needs. Some will be successful enough to go global and scale-up the social innovation. Grass root communities, civil society organizations, charities and social entrepreneurs are all involved in this EU programme. According to the official website CAPS contributes to:

- 1 Open policy-making, open democracy, digital governance, and citizen engagement
- 2 Collaborative economy, maker spaces, circular economy (consumption/production ratios, encouraging reuse & recycle).
- 3 New collaborative approaches to inclusion, agrifood, health, mobility.
- 4 Environmentally sustainable and energy efficient solutions
- 5 Social innovation, sustainable development, social entrepreneurship.

The list is long and wishful. IA4SI is the CAPS project responsible for facilitating other projects to measure their actual impact. The methodology is broad enough to cover all of the domains listed above. This book gives an overview of the findings. A Self-Assessment Toolkit was developed to find out (based on real user data) if achieved impact is anywhere near what they expected it to be. Benefits are quantitative or qualitative, can be in the short or long term, based on subjective or objective measurement. The impact assessment toolkit requires specifying the results of real users testing CAPS and naming the targeted beneficiaries inside or outside the project.

This initiative is a bold first step, and sustainable development challenges are VERY BIG ONES. Citizen action is needed to improve social welfare and to find more personalized sustainable development solutions that work for citizens themselves. Connected individuals are aware of what others do, they can query and get facts. This awareness in turn motivates them to do more, or to do it better. Citizen engagement can be a game changer.

This book will interest user data researchers, consultants and social scientists who are expert practitioners of impact assessments.

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Introduction

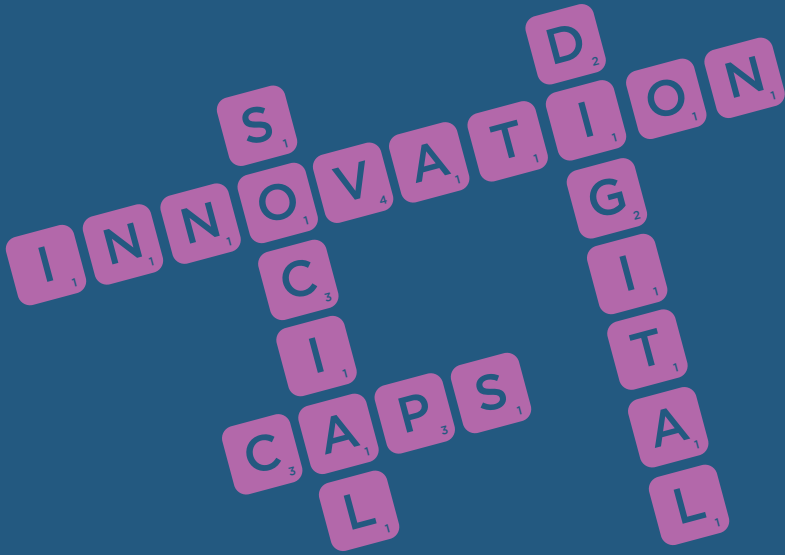
This book presents the results of the EU funded IA4SI project². The project developed a quali-quantitative methodology, implemented a number of tools and performed the socio-economic, political and environmental assessment of Digital Social Innovation initiatives and, more specifically, of CAPS projects. The acronym CAPS stands for Collective Awareness Platform for Sustainability and social Innovation and represents a new field within the European research activity in the ICT sector.

The publication is addressed to a wide, non-technical, audience and it provides an overview on what Digital Social Innovation (DSI) and CAPS are and on the IA4SI approach (Section 1).

Section 2 includes a detailed description of the IA4Si impact assessment methodology, the results of the assessment of CAPS projects and a snapshot of the online tools developed during the project for gathering data and engaging citizens.

The impact assessment analysis allowed the identification of emerging best practices in the field of DSI and furthermore, in the light of the main observations emerged from the CAPS impact assessment results, the policy recommendations were developed aiming at preventing the emergence of the main constraints identified by IA4SI while analysing the data provided by the projects (Section 3).

² <http://ia4si.eu/>



SECTION

1

Collective Awareness
Platforms for Sustainability
and Social Innovation

(Digital) Social Innovation and impact assessment*

This first chapter will introduce some of the core concepts that guided the work of the IA4SI project. More specifically it will question the definition of social innovation and will map out the emerging field of Digital Social Innovation. The CAPS domain and the projects financed so far are then introduced and the link between CAPS and the wider concept of DSI is clarified. The chapter concludes by delineating the state of the art in terms of impact assessment methodology for this field and introduces the IA4SI approach.

1.1 What is social innovation?

Searching for the term “social innovation” on Google results in 32,000,000 entries; the popularity graphs on Google Trend see a constant rise in popularity from 2009 onward. The term is particularly popular in Singapore and Canada, followed by Hong Kong, Denmark, Australia, U.S.A., U.K., India and Italy³. It is currently used in different sectors - from the welfare state to urban planning, from local development to social entrepreneurship and, according to different scholars, it has already become a buzzword (Grisoglia and Farragina, 2015).

For this reason, defining social innovation is not an easy task but, as a starting point, it is useful to define social innovation as any “new products, services or methods that tackle pressing and emerging social issues and, at the same time, transform social interactions promoting new collaboration and relationships” (Murray et al., 2010: 3). Social innovation is said to generate a new product/service by simultaneously changing the way in which this product/service is pro-

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³ Search done on April the 13th <https://www.google.com/trends/explore#q=social%20innovation>

duced. It benefits society 'twice', that is, by proposing a solution to a specific problem and by offering new social links and collaboration opportunities. With reference to the latter of the definition - i.e. new collaborations and relationships - social innovation is often seen as a way to overcome the classic division between public and private actors pushing for new forms of collaboration among different actors. Social innovation dynamics also mark the emergence of new actors, in some cases including informal organisations such as citizen movements and spontaneous groups that become a point of reference in providing services once offered by the welfare state. The term "social" can also be interpreted as a reference to the engagement of people in the actual resolution of a given social issue so that social innovation is seen as a process that mobilises citizens in different activities: decision making, planning, sharing of resources and practical, face to face, collaboration. In this sense, social innovation is associated with terms such as participation, engagement, empowerment, co-design, bottom-up, sharing, grassroots initiatives and so forth.

Examples of social innovation can include but are not limited to: co-housing, the Grameen bank and microfinance in general, eco-towns, the time bank, participatory budgeting models such as that of Porto Alegre, the Open University, emission trading, and fair trade.

The definition of social innovation proposed by Murray, Caulier-Grice and Mulgan (2010) is well recognised by policy-makers and institutions. For example, the Bureau of European Political Advisers of the European Commission (BEPA) quotes it in a dedicated publication (2011); the concept of social innovation is a part of the Innovation Union Flagship in EU 2020 strategy (EU, 2010) and since 2014 the European Union has launched the "Employment and Social Innovation programme" with funds equal to € 919,469,000 for the period 2014-2020. The United States of America, under the Obama Presidency, opened the Office of Social Innovation and Civic Participation with a dedicated budget. United Kingdom Prime Minister, Cameron, renamed the former Office of the Third Sector the Office of the Civil Society and has activated social innovation funds (Bassi, 2011). Go-

vernment interest in social innovation is also shown by the OECD initiatives, which gave rise to the Forum on Social Innovation, an 11-member organisation that deals with policies and the exchange of best practices supporting social innovation. The forum, created in 2000, focuses on the role governments can play in social innovation and sets the core of social innovation as the improvement of well-being and quality of life for individuals and communities.

In analysing the meanings attributed to social innovation by these institutions, however, some differences can be detected in the understanding of the concept. In most cases, the term is used to describe and recommend a new centrality for private-public partnerships as instruments capable of innovating the welfare state, and making it more efficient (BEPA, 2011). So, even if these institutions use the first definition described above, their operationalization may vary considerably depending on the inclusion or exclusion of social actors as potential social innovators. More specifically, in what can be defined as a governmental approach to social innovation, social entrepreneurs and companies, cooperatives and consultancies are recognised as the main innovators that can support government in the implementation of new initiatives and in changing the welfare state. Bottom-up processes, and social movements may find it difficult to access the support measures offered by governments under social innovation programmes without the mediation of social entrepreneurs and ad hoc consultancies (Illie and During, 2012).

As already mentioned, the rapid diffusion of the term, particularly within social and political circles may, arguably, risk turning it into a buzzword. In order to avoid such a risk, it is important to emphasize that the term “social innovation” is not new. Many of the social services taken now for granted, and seen as “institutional”, were once considered to be great social innovations, such as free national health systems, public kindergartens, cooperatives, and trade unions (Mulgan et al., 2007). It is interesting to note that some of those innovations were initiated by social movements while others by actors that we would nowadays call social entrepreneurs so that the co-presence of different actors as protagonists of social innovation initiatives

could be considered part of the nature of the phenomenon itself.

The definition of social innovation proposed by Philip, Deiglmeier and Miller (2008:36), helps clarify the goals of social innovation initiatives that, according to the authors are meant to be “more effective, efficient, sustainable, or just than existing solutions”. If the first two terms are somehow typical when talking about innovation, the presence of the terms “sustainable” and “just” imply an important shift introducing ethical aspects in the debate about innovation. With the term social innovation, the accent is not on economic benefits (which are still part of the vision in term of efficiency) but on social and environmental benefits looking for solutions that are aimed to the future generations, to the planet and to a more equal distribution of resources (including intangibles ones such as power and knowledge).

It is also important to notice that the term “social innovation” can be seen to accentuate distinct facets in different countries. For example, in the Anglo-Saxon world social innovation tends to be linked to the ‘third way’, as a new path for public-private partnerships. It is seen as a way for entrepreneurs and civil society to support governments in tackling social issues. Social innovation acts across boundaries between the state, market and third sector and contributes to the erosion of such boundaries (Phillis et al., 2008). In other countries such as France, for example, it still tends to recall the idea of being an “alternative” to the Government and to political institutions (Godin, 2012). This connotation is also used by social activists and is linked to an alternative, Left-wing school of thought for whom social innovation is a process and a strategy to change society through solidarity, cooperation and cultural diversity. In this perspective, the protagonists of social innovation are mainly social movements and bottom-up initiatives. And here, “social” has another meaning, and that is, social as community-based, social as non-institutionalised, social as popular.

Finally, with reference to urban development, the term social innovation has been used to describe a process that is driven by, or, at least deeply engages inhabitants in the transformation of neighbour-

hoods and is, therefore, in opposition to top-down approaches to local development and city renewal (Sharra and Nyssens, 2010). From this overview, social innovation can be said to lack a univocal definition and, when used by different social actors (such as governments, researchers, activists, third-sector representatives), may be linked to different value propositions. Social innovation is emerging as a field of scrutiny, and one of the first items on its agenda will likely be to creating a more precise definition or classification of social innovation and to make its epistemology more explicit. However, the capability of this term to attract attention from different stakeholders, to open new spaces of collaboration for different social actors (such as researchers, policy-makers, social entrepreneurs, social movements, etc.) and different disciplines (sociology, economy, management studies and others), to give a new centrality to the social dimension of innovation and - as will be illustrated in the next paragraph - to close the gap between social and technological innovation, are good reasons to continue using this term and dedicating more effort to its analysis.

1.2 Digital Social Innovation

The term Digital Social Innovation is emerging as a way of indicating digitally enabled or supported social innovation. Social media, connected to the Internet of Things, to big and open data and crowdsourcing platforms, are seen as new instruments for fostering social innovation both in its institutional and community-driven understanding. While social innovation proposes new face-to-face solutions to social issues, for example engaging a specific local community in the renewal of a neighbourhood, digital social innovations are expected to create new online instruments (new ICT services) that enable social innovation and take advantage of the network effect typical of the Internet. Thanks to new ICT instruments or to a better and more efficient, effective, sustainable and fair use of existing ICT tools, Digital Social Innovation proposes new ways of collaborating,

creating and sharing knowledge and resources online.

Examples of digital social innovations include Wikipedia (with reference to knowledge creation and sharing), Change.org which allows users to launch campaigns as instruments for political participation, crowdfunding platforms such as Kickstarter that innovate fund-raising models by asking individuals to economically support an idea, project or production, or Atmosfair (<https://www.atmosfair.de>) that allows travellers to calculate and offset the impact of their flights, generating funds to be used by the organisation to finance renewable energy projects.

The research in the field is still at an early stage but a preliminary mapping of Digital Social Innovation initiatives is provided by NominetTrust (<http://www.socialtech.org.uk/>), a spin-off of one of the main global Internet registries that provides support and findings for digitally based social innovation initiatives. Another important resource for navigating this new phenomenon is the Digital Social Innovation project (<http://www.digitalsocial.eu>), which crowd mapped organisations and projects active in the field. Up to January 2015, the project mapped 992 organisations with 6022 active projects. The areas of society in which the organisations are most active are: education and skills, participation and democracy but also science and technology project and finance and economic initiatives such as crowdsourcing are represented (Bria, 2015). The EC-JRC Institute for Prospective Technological Studies already started an in-depth mapping and analysis of the ICT-Enabled Social Innovation (IESI - <http://is.jrc.ec.europa.eu/pages/EAP/eInclusion.IESI.html>).

The issues in defining social innovators actors, mentioned in the original concept (see par. 1.1), also hold true for the digital domain: digitally-enabled social innovation can be promoted by social movements, by entrepreneurs (social or not) and/or by public bodies. As in the face-to-face world, social innovation initiatives can be profit or not-for-profit. The Digital Social Innovation projects' sample shows that the majority of organisations, participating to the crowd mapping are social enterprises, charities and foundations, followed by representatives of the business sector. Community-based organisations

or community networks are the third most represented group, while actors from academia and the research world, governments and public sectors representatives are less represented (see Fig. 1). It is important to mention that, as it will be described in chapter 3, CAPS stakeholders differ from the one emerged in the DSI study since the presence of academia is more prominent. This may be due to the higher capability of academia organisation to access European research funds if compared to less structured or smaller organisations.

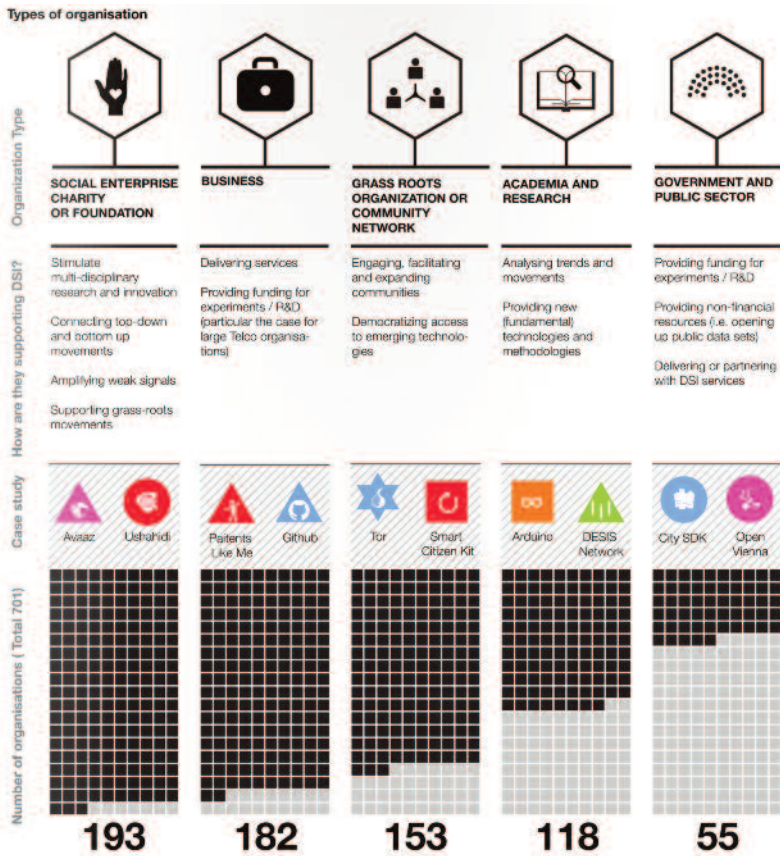


Fig. 1 - Main protagonists of Digital Social Innovation initiatives (source: Bria, 2015)

Digital Social Innovation is seen as promising due to the ubiquitous nature of social networks and its capability to reach an immense audience; beside this, it is helping to reach people normally disconnected from public and local services and appeals to the youngest generations for which online life might be more relevant or easier to access than face to face participation at a community level. Never the less, widening the gap related to the digital divide, lack of digital skills and similar is one of the major risks run by engaging those that are already engaged. This is one of the topics covered by the analysis of the IA4SI project (see chapter 3).

Another important aspect is related to the transparency and openness of the ICT solutions proposed. In fact, every social innovation initiative can make use of ICT tools such as management software, social networks for promoting their initiatives, websites etc., but the accent in Digital Social Innovation is on instruments that also foster a new use of ICT which is more aware and respectful of users rights in terms of access, privacy, possibility to use and re-use the solutions generated and so forth. In this sense, open solutions are preferred to proprietary ones and key words become: open knowledge, open hardware, open access, open data, open networks, decentralised platforms, privacy-aware solutions, etc.

As it will become more clear in the next paragraph the similarities between the term Digital Social Innovation and CAPS are evident so that the work done by IA4SI within the CAPS domain can also be of interest for the Digital Social Innovation community at large.

1.3 Collective Awareness Platforms for Sustainability and Social Innovation (CAPS)

The acronym CAPS was first used by the European Commission (EC) in 2012, in the context of the Seventh Framework Research Programme. It served to identify a new group of projects capable of facilitating social innovation by using ICT.

To a certain extent this opened a new research area, which the IA4SI project investigated, both at a descriptive level and by considering socio-economic, environmental and political impacts.

So far, the EC has issued two calls for projects within the CAPS domain. With the first call under Seventh Framework Programme (2013), the European Commission invested € 19 million into 12 projects and € 500,000 for a Study on "Social Innovation in the Digital Agenda". Another three projects - funded under other programmes - were added to this domain as well, because their research activity was relevant for CAPS. As a result, the first call can be said to consist of 15 projects.

The second call (2014) under Horizon 2020, benefited of a total budget of € 43 million. Nearly 200 proposals were submitted, of which 24 have been funded and started in January 2016.

The European Commission defines CAPS as follows:

"The Collective Awareness Platforms for Sustainability and Social Innovation (CAPS) are ICT systems leveraging the emerging "network effect" by combining open online social media, distributed knowledge creation and data from real environments ("Internet of Things") in order to create awareness of problems and possible solutions requesting collective efforts, enabling new forms of social innovation.

The Collective Awareness Platforms are expected to support environmentally aware, grassroots processes and practices to share knowledge, to achieve changes in lifestyle, production and consumption patterns, and to set up more participatory democratic processes. Although there is consensus about the global span of the sustainability problems that are affecting our current society, including the economic models and the environment, there is little awareness of the role that each and every one of us can play to ease such problems, in a grassroots manner." (<http://ec.europa.eu/digital-agenda/en/collective-awareness-platforms-sustainability-and-social-innovation>).

The first paragraph of the quote proposes a definition of CAPS, while the second one lists the expected benefits or impacts, of CAPS which was the main interest of the IA4SI project.

The publication “Collective Awareness Platform for Sustainability and Social Innovation: An Introduction” (Arniani et al., 2014) proposes an analysis of the single terms composing the label ‘CAPS’ that can be used as a point of reference.

To summarize, Collaborative Awareness Platforms can be seen as ICT-supported collaborations of human and non-human actors: communities, together with collaborative online platforms, network of sensors and the use of open and big data are enabled to produce, share and widen the understanding of social issues and develop ad hoc solutions. The term platform refers to systems which integrate different ICT tools; socio-technical solutions for promoting reciprocal understanding among social actors, self-organisation, collaboration and orchestration of actions (Arniani et al., 2014).

By analysing the CAPS projects financed so far, it is possible to group CAPS stakeholders in four main categories: research, business, civic society and policy-makers.

More precisely, CAPS stakeholders can be mapped as in the picture that follows.

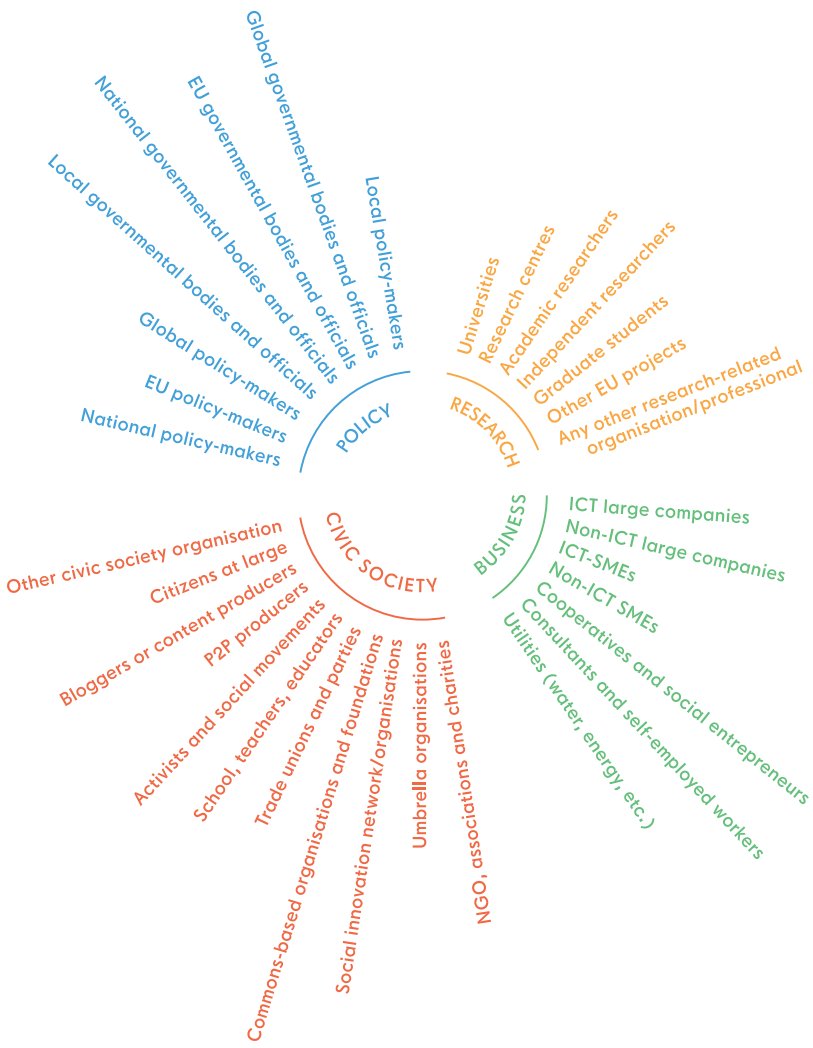


Fig. 2 - CAPS stakeholders. (Source: Arniani et al., 2014)

As anticipated in the forward, considering now the topics covered by past and current CAPS projects, the topic suggested by the EU programmes, the categories used by the Digital Social Innovation project⁴ for categorising European initiatives in the field, and the categorisation of social innovation projects proposed by the Tepsie project (Bund et al., 2013), the following categorisation could be made:

- Energy and environment
- Social inclusion
- Participation, democracy and rights
- Economy: production and consumption
- Knowledge, science and information
- Rights
- Finance
- Culture and art
- Health and wellbeing
- Community creation, renewal and reinforcement
- Work and employment
- Neighbourhood regeneration and housing

Therefore, it is possible to interpret CAPS projects as a sub-category of the wider concept of Digital Social Innovation, in fact, CAPS projects are ICT-enabled pilot initiatives, which address pressing social issues and sustainability issues by promoting the active participation of European citizens. CAPS projects are digital social innovation initiatives and as such are expected to propose innovative solutions which should be more efficient, effective, just and sustainable than available ones. CAPS initiatives are multidisciplinary in nature and most of them have a relevant research aspect.

⁴ www.digitalsocial.eu

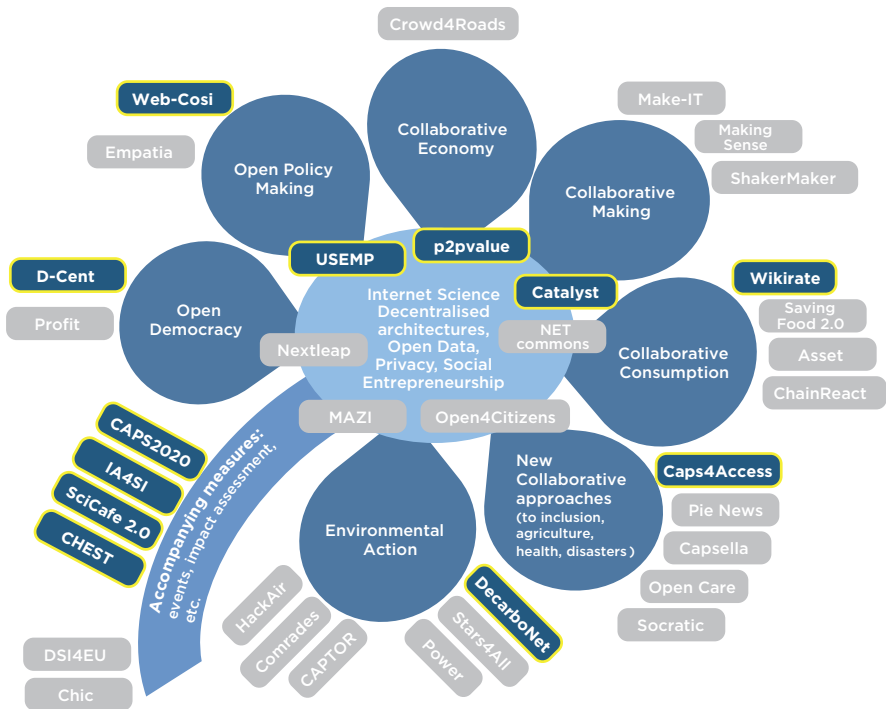


Fig. 3 - CAPS2020 ecosystem (Source: European Commission, adaptation of the editors)

CAPS projects financed so far can be very synthetically described as follows. CAPS financed in the first call are listed before the CAPS that are currently running:

Call 1 projects:

- **CAP4ACCESS:** using OpenMaps and citizens collaboration for improving city usage by people with reduced mobility
- **CATALYST:** a set of new tools based on collective intelligence and analytics supporting online community management, knowledge exchange and decision making processes
- **D-CENT:** new instruments for direct democracy, e-participation and for experimenting new approaches to economy such as the use of alternative currencies

- **DECARBONET:** Developing ICT tools and engagement processes for raising awareness about environmental issues
- **P2PVALUE:** analysing, mapping and defining the value generated by commons-based peer production communities and projects
- **USEMP:** supporting social network users in better managing their privacy and become more aware of their rights and of the value of their online activities
- **WIKIRATE:** an advanced Wiki in which citizens can share their knowledge on companies social responsibility and support others to make informed decisions in terms of consumption

The first Call also financed 4 support actions, one of which was IA4SI:

- **CAPS2020:** supported the CAPS community and the (digital) social innovation community at large by organising international annual events
- **SCICAFE2.0:** promoting collaborating tools and models for the SciCafe community and beyond
- **WEB-COSI:** support the aggregation, spreading the understanding and increase the trust in non-official statistics

Finally, the first call sees the presence of the study on Digital Social Innovation in Europe (DSI) which was quoted earlier in this chapter, which mapped DSI organisations and projects and the Seed Funding project CHEST which offered € 3 million in funding for digital social innovations through three open calls.

Call 2 projects⁵:

- **ASSET:** developing knowledge and tools for supporting new forms of collective sustainable consumption
- **CAPSELLA:** promoting a more sustainable use of land and a more aware approach to agro biodiversity
- **CAPTOR:** fostering bottom-up collaborations, including citizens science initiatives, to raise awareness and find solutions to the air pollution problem
- **CHAINREACT:** integrates ICT platforms with the aim of making supplier networks transparent, understandable, and responsive so that citizens and companies can make more responsible consumption and collaboration choices

⁵ The information about all the financed projects is available at <https://ec.europa.eu/digital-single-market/en/news/22-new-caps-projects-horizon-2020> (update 31/05/2016)

- **CHIC:** coordination & support action, providing community building events, media and communication, a yearly Digital Social Innovation Fair, analysis of best practices and roadmapping
- **COMRADES:** supports local communities in properly react to crisis (such as natural disasters) by proving a platform encouraging participation, effective sharing of information and self-organisation
- **EMPATIA:** supporting participatory budgeting practices by integrating/developing dedicated ICT tools
- **HACKAIR:** developing an open platform supporting citizens to monitor air quality in their territories
- **MAKE-IT:** analysing the Maker phenomenon and bridge it with the CAPS approach
- **MAZI:** making available a DIY toolkit for creating Community Wireless Networks
- **NETCOMMONS:** studying and support the uptake of community networks
- **NEXTLEAP:** developing new decentralised and privacy-preserving protocols for online interactions
- **OPEN4CITIZENS:** support the bottom-up development of public services based on Open Data and co-design approaches
- **PIE NEWS:** collective intelligence solutions to solve new forms of poverty and help social inclusion
- **POWER:** facilitating the sharing of knowledge among local authorities on water-related challenges and solutions
- **PROFIT:** Supporting citizens in acquiring competences and in having access to information needed for improving their financial capability
- **SAVING FOOD 2.0:** supporting the reduction of food waste and develop better redistribution processes
- **SOCRATIC:** proving a platform supporting citizens in developing solutions able to meet the Global Sustainability Goals

1.4 Impact assessment for CAPS and DSI

As previously mentioned, the (digital) social innovation field is still under development and its understanding as a dedicated research field is still on-going (The Young Foundation, 2010; Murray et al., 2010a). Most of the work conducted so far is dedicated to the definition of the concept, its guiding processes and success factors. Little has been done so far to analyse the results of social innovation initiatives; to evaluate the benefits produced by public-funded programmes in the field and to compare the effects of social innovation projects with previous and alternative models of tackling social issues.

Methodologies for assessing the outputs and the impacts of social innovations are still at an early stage of development (Bund et al., 2013). The analyses conducted so far are mainly based on case studies and qualitative methodologies; so that comparisons and data aggregation are not yet available (Cajaiba-Santana, 2014; Biggs et al., 2010; Smith and Seyfang, 2013).

Murray and others (2010) list a variety of methodologies suitable for impact assessment of DSI initiatives. These include: standard investment appraisal methods, cost-benefit analysis and cost-effectiveness analysis, stated preference methods, social accounting methods, quality of life measures, social impact assessment, comparative metrics or benchmarks and user experience surveys. Some of these methods have been considered and included in the IA4SI methodology, but none of them has been specifically made operational and adapted to the DSI before the work done by the IA4SI project, which offers a customized/customisable instrument for the sector.

In this regard, it is important to underline that social innovation cannot be considered as synonymous with social entrepreneurship or the third sector in general, both of which can benefit from several impact assessment instruments. Social innovation, in fact, sees the collaboration of different actors, which may include, but are not limited to, social entrepreneurs; this generally happens in

mixed consortiums and tends to have more fluid forms of organisation than classical forms of the third sector such as charities, cooperatives and the like.

Assessment of social entrepreneurship and of the third sector impacts are regularly calculated both at enterprise and country level. Corporate social responsibility initiatives - which may overlap with some forms of social innovation as they are delivering service in a more just or sustainable way - are often assessed using ad hoc social return of investment (SROI) instruments and philanthropic organisations use multiple, non standardised methods for supporting decision making processes related to investments in development programs. However, as we will see, we can use the lessons learned from these areas of activities only in a limited way as IA4SI is dealing with international, time limited projects and not with entrepreneurship or public driven initiatives (Passani et al., 2014).

The research on impact assessment is particularly challenging as social innovation is intended to produce positive changes in terms of individuals and groups wellbeing and to be more efficient, effective and just than alternative solutions (Philip et al., 2008). Operationally defining what well-being improvement is, how to measure improvement in social justice and finding the appropriate means of comparison among initiatives are the main challenges of current research themes in the field. In this sense, this research area confines, but does not perfectly correspond to, topics such as social capital, intangible assets, public goods, alternative economic and non-economic statistical analysis (which are criticising the role of GDP in assessing national situations), local development and participatory methods, amongst others.

Another focal point of investigation is related to the interdisciplinary nature of social innovation and what it can mean, or achieve in terms of collaboration among different stakeholders. Social innovation initiatives can serve as a testing ground for new collaborative processes and for instruments fostering such collaborations. Analysing the effects of social innovation initiatives can also be helpful in refining the understanding of the social innovation con-

cept itself, as well as in orienting policies. It is useful to see how initiatives perform in terms of impact, sustainability and scalability. This can help in distinguishing social innovation from other processes of social and institutional change and can lead to a different management of funds.

Finally, it is important to consider that, social innovation is a term deeply rooted in the current socio-political and economic situation. The role of governments, trade unions, associations, family and other social institutions seems to be weaker than in the past. New social challenges have emerged and some of the traditional ways of managing social issues (market or government-based) seem to be less and less able to properly answer these challenges. Citizens are looking for new forms of participation, information availability is growing in exponential terms but it is increasingly difficult to navigate and to evaluate in terms of trustworthiness. Climate change calls for lifestyle transformations, cities are growing in complexity and inhabitants are demanding more customised services and a higher quality of life. In this scenario, new and emerging digital technologies, especially those such as social media are seen as potential new spaces for collaboration and self-organisation able to propose new production, consumer and lifestyle models. In this view, social innovation, and its digital counterpart is emerging as a promising concept for describing new patterns for innovation while, at the same time, positively changing social relationships of society at large.

IA4SI project wished to contribute to the debate in the field by analysing CAPS projects financed by the first call, their objectives, outputs and impacts. Thanks to close collaboration with CAPS projects and the data that have been gathered and analysed at aggregated level, some of the research topics mentioned above have been addressed with the aim of improving our understanding of initiatives that are interdisciplinary in nature, multi-situated (online, offline, at local level and international level possibly at the same time) and multi-stakeholders.

1.5 IA4SI project: objectives and approach

As mentioned, IA4SI was financed within the CAPS programme, with the aim of:

- developing a methodology to assess the social, economic, environmental and political impacts of the CAPS projects
- applying the methodology to the projects financed in the first CAPS Call both at single project level and at aggregated (domain) level
- opening up the CAPS domain to European citizens by presenting them the projects' aims and achievements and by asking them for feedback on the available information. It was considered crucial, in fact, to make the results of EU funded projects available to citizens, especially those such as CAPS, that develop potentially interesting solutions for them.

In order to achieve these objectives the consortium developed three technological solutions: a Self-Assessment Toolkit (SAT) supporting project to evaluate their impacts, a User Data Gathering Interface (UDGI) for engaging CAPS project users in the assessment of the projects and the Impact4you platform for presenting CAPS to European citizens and for gathering their feedback.

The IA4SI methodological framework - described in chapter 2 - is based on a quali-quantitative multi-stakeholders approach, which engages projects coordinators, their partners, project users and, to a certain extent, European citizens. It builds on previous research in the field and takes advantage of well-tested methodological frameworks adapted to the peculiarities of the Digital Social Innovation sector and particularly to CAPS (Arniani et al., 2013).

The IA4SI methodology is based on the Cost-Benefit analysis (CBA) and on the Multi-Criteria Analysis (MCA), allowing the capture of both the impacts measurable in monetary terms and non-monetary terms⁶. Besides Cost-Benefit analysis and Multi-Criteria analysis, IA4SI made use of an emerging approach called Social

⁶ Please refer to Passani, Bellini, Spagnoli, Ioannidis, Satolli, Debicki, Crombie, 2014 for a more elaborated analysis of these two techniques and the evaluation of their pros and cons. Other references on the Cost-Benefit Analysis and the Multi-criteria analysis are: Brent, 2007; EC, 2008; Department for Communities and Local Government, 2009

Media ROI and adapted the Environmental Impact Assessment Framework to the needs of CAPS domain. Finally, IA4SI explored the changes in opinions and behaviours generated by CAPS projects through the user survey that took advantage of the Stated Preference Techniques and of the Revealed Preference methods. It is important to consider that the IA4SI methodology is mainly a **self-assessment** methodology, which aims to provide projects with useful information for improving their work during the life-time of the project and re-orienting their activities. The final purpose of the IA4SI projects was to provide projects with information able to support them in maximising their impacts. In this sense, the assessment exercise wished to foster a learning process in all the users, including the IA4SI team.

Another important characteristic of the IA4SI methodology is the process used for its development. Coherently with the nature of social innovation and of CAPS, the IA4SI team followed a participative approach. The IA4SI methodology has been elaborated starting from an extensive literature review on Social Innovation, Digital Social Innovation, impact assessment methods for these domains and conceptually close domains such as the third sector, development-related investments and online communities assessments.

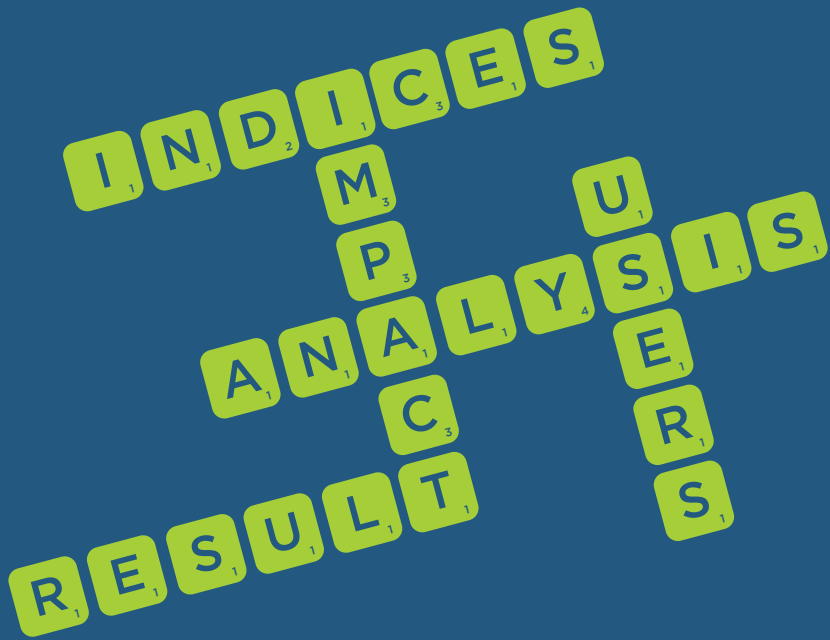
Besides this, the IA4SI team carried out interviews with the representatives of all CAPS projects and organised several workshops for presenting and validating the methodology, the IA4SI synthetic indices (see chapter 2) and validate them. By using facilitation techniques and team-working methods the methodology have been constantly refined and all CAPS projects participated in the process. The methodology described in the following chapter is the result of this collaborative effort; this does not imply that the methodology is meant to be a static tool. The IA4SI methodology is meant to be modular and customisable and for sure further use could, and should, bring to a constant update of the methodology itself. Through the work described in the following paragraphs, IA4SI aimed to set a robust baseline for any future development

in this field and to offer a concrete tool to be used by CAPS in the future.

With reference to the engagement of European citizens, another important pillar of the IA4SI approach, the Impact4you platform allows the presentation of all CAPS projects. The portal was constantly updated and gave citizens the possibility to learn about CAPS, express their opinion on the projects' achievements and outputs and get in direct contact with them. The feedback provided by citizens, together with the results of the self-assessment, provided CAPS projects with useful information about how their project was perceived and on aspects that might require improvements.

At a glance: defining guiding concepts

- Social Innovation is an emerging concept that risk to become a buzzword if not better defined. At the same time is a promising concept for imagining new multi-stakeholders ways of solving pressing social issues with the engagement of citizens
- Digital Social Innovation refers to new ICT services that support social innovation and, at the same time, innovate ICT in itself by posing more attention to social dimensions and by exploiting the potentiality of open software, open hardware and open knowledge approaches
- CAPS, Collective Awareness Platform for Sustainability and social innovation are a new area in the European Research framework and can be seen as part of the DSI phenomenon.
- For all the initiatives in these new field there is a lack of impact assessment methodologies and related assessments of results. IA4SI offered its contribution by developing a quali-quantitative impact assessment methodology for on-going CAPS projects and by applying it to 11 projects.



SECTION

2

IA4SI
socio-economic
impact assessment

Impact Assessment Methodology*

This chapter describes the impact assessment methodology for DSI initiatives and the approach and methods on which it is based. Adapted from previous and already tested methodologies, the one developed by the IA4SI project is framed upon the Impact Value Chain Approach, and it analyses the projects' impacts according to four synthetic indices articulated in relevant sub-dimensions. The following paragraphs explain in details the logic of the approach and of the indices.

2.1 The overall framework

The IA4SI **methodology** builds on previous experiences in impact self-assessment of European projects (SEQUOIA, ERINA+ and MAXICULTURE projects, mainly)⁷. As anticipated, it follows a qualitative approach to impact assessment and is based on principles of Cost-Benefit Analysis (CBA)⁸ and of Multi-Criteria Analysis (MCA)⁹. These two methods are seen as complementary as they assist to frame both qualitative and quantitative impacts that can be represented in monetised form as well as impacts that

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⁷ Information about the previous projects can be found at: <http://www.lse.ac.uk/media@lse/Who-sWho/AcademicStaff/PaoloDini.aspx> (summary of SEQUOIA project and deliverables); www.erinaplus.eu; www.maxiculture.eu. Main reference for the methodologies are the following: Passani et al., 2013; Passani, Bellini, Spagnoli, Ioannidis, Satolli, Debicki, Crombie, 2014; Passani, Monacciani, Van Der Graaf, Spagnoli, Bellini, Debicki, Dini, 2014

⁸ CBA is aimed at evaluating the net economic impact of a public project involving public investments. This method is used to determine if project results are desirable and produce an impact on the society and economy by evaluating quantitatively monetary values

⁹ MCA is used to evaluate non-monetary values of a project and to compare and aggregate heterogeneous values (tangibles and intangibles, monetary and non-monetary). It combines different decision-making techniques for assessing different impacts of the same project and identifying the opinion expressed by all stakeholders and end-users

are better described in non-monetary terms (such as social or political impacts). Other methodological frameworks informing the IA4SI methodology are Social Media ROI, the Stated Preference Techniques and the Revealed Preference methods in order to explore the changes in opinions and behaviours generated by CAPS project through the user survey(s). The environmental impact assessment is inspired by the Organizational Environmental Footprint. The combination of these methods yields an approach that allows the consideration of a wide spectrum of impacts together with the combination of variables that are expressed in different ways.

Impact assessment activities intend to answer the question “what is the difference that a project makes at the socio-economic, environmental level and political level compared to current practices?”. This is done by mapping and assessing the inputs, activities, outputs, expected outcomes and expected impacts of the projects. For this purpose this methodology applies the Impact Value Chain approach (adapted from Epstein and McFarlan, 2011) reported in Figure 4 , also known as logic model, or logic chain.

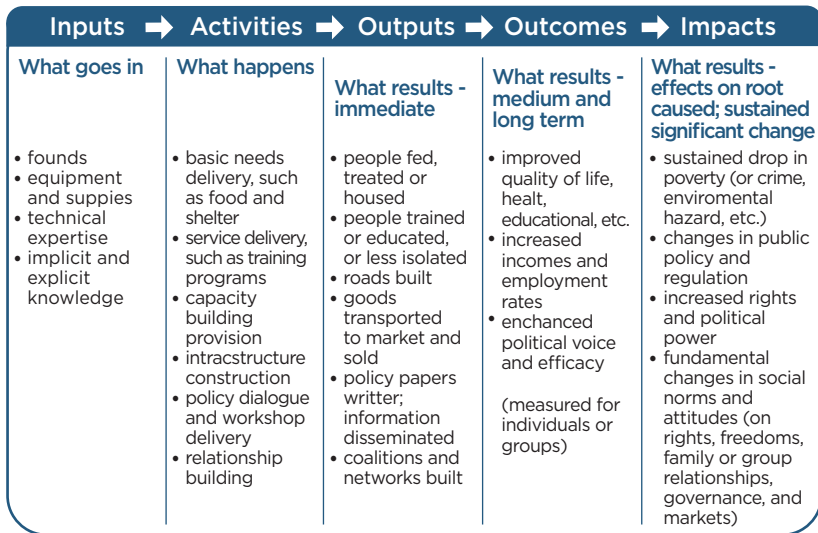


Fig. 4 - Graphical adaptation of Logic model

A more detailed explanation of key terms can help better clarify the framework:

- **Inputs:** the key tangibles (monetary) and intangibles (non-monetary) investments made in a project. The analysis of inputs is important at the project level and at aggregated level both when running a qualitative analysis and when applying quantitative methods.
- **Activities:** the specific programs or actions that the project undertakes. For the CAPS it refers to the research, development and piloting activities performed.
- **Outputs:** tangible and intangible products and services that are the result of the project activities. Describing outputs means describing the observable results of a project such as the number of published scientific papers, the number of released software, the number of developed policy recommendations, etc. They need to be constantly monitored during the project lifecycle.
- **Outcomes:** specific changes in behaviours and sectors affected by the delivery of the services and products created by the projects. Outcomes are the effect produced by the project results on individuals or the environment in the medium to long-term.
- **Impacts:** they are long-term effects of an action and can be direct or indirect, intentional or unintentional, positive or negative. Impacts are the net difference made by an activity after the outputs interact with society and the economy and produce long-lasting and significant changes at the very roots of dynamics/processes.

Moreover, in order to describe and possibly quantify the differences produced by a CAPS project, or by any other innovative initiative, it is necessary to have a description of alternative scenarios or **counterfactual scenarios**. Typically, the counterfactual scenario represents the situation without the project outputs, which could be defined as "baseline scenario", a sort of no-investment scenario without the project outputs (Monacciani et al., 2012). The baseline

scenario is the most suitable counterfactual scenario used in the context of research and pilot projects.

2.2 IA4SI synthetic indices

The IA4SI methodology analyses CAPS projects and the CAPS domain at an aggregated level by using eight synthetic indices: four of them are related to key areas of impact (social, economic, environmental and political), and are called **vertical indices**. The IA4SI methodology also contains four **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 across all the areas of impacts. The IA4SI synthetic indices are the following:

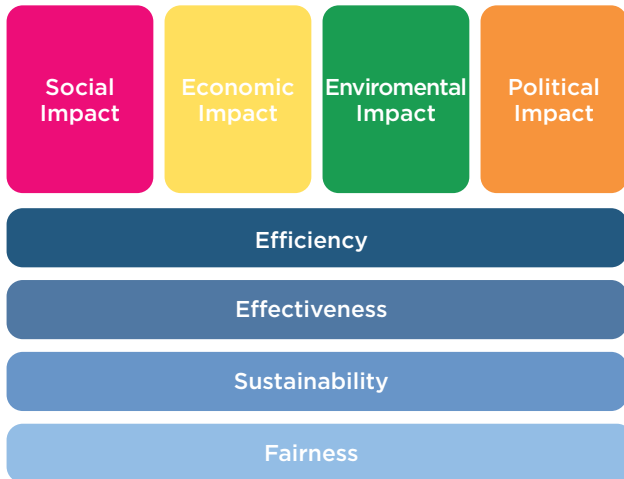


Fig. 5 - IA4SI vertical and transversal indices

Each index is composed of a number of dimensions or sub-indices, and each dimension is linked to specific variables. The sub-indices correspond 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”, etc. The figure below illustrates the vertical indices and their composition, which will be detailed in the following paragraphs:

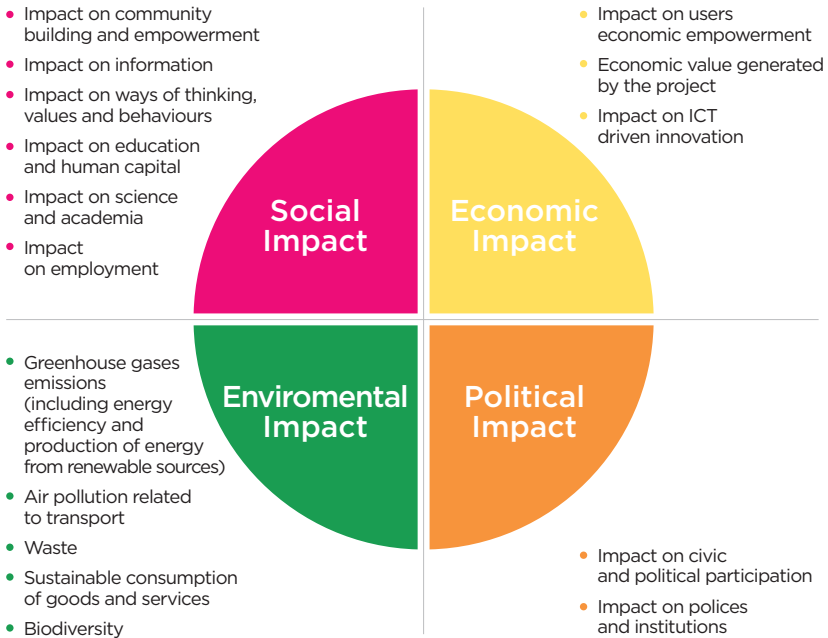


Fig. 6 - IA4SI vertical indices

Considering the indicators included in the methodology, we have different measurement units as well as relative or absolute va-

lues. Therefore, before the aggregation of indicators, normalisation is required prior to any data aggregation as the indicators in the data set often have different measurement units. After the normalisation¹⁰ and aggregation, indices are then expressed in a 0-1000 scale and the results obtained can be interpreted as follows:

PROJECTS' ASSESSMENT RESULTS				
0 - 200	201 - 400	401 - 600	601 - 800	801 - 1000
600				
Poor	Fair	Good	Very Good	Excellent

Fig. 7 - Projects' assessment results example

A set of benchmarks were built and collected with the aim of making the assessment results comparable among themselves and, where possible, with external references.

As a final remark, the methodology is meant mainly for in itinere (on-going) impact assessment. While it can also be used for assessing projects impacts after they have ended (ex-post), it must be underlined that – throughout the IA4SI project – the methodology has mainly be tested with on-going CAPS projects rather than (similar) projects that may have ended already. Moreover, the proposed methodology is meant as a tool for assessing projects and not programs. In other words, the analysis that IA4SI methodology carries out in the digital social innovation domain, is likely to yield important insights to the EC about this area of activity, yet cannot serve as program evaluation which would demand a more extensive period of scrutiny and a different approach.

The following paragraphs describe in detail the composition of the synthetic indices and of their sub-dimensions.

¹⁰ This task is performed, after the elimination of outliers, through the use of Min-Max and categorical scale methods

2.3 Social impact

This area of impact (and related index) considers the changes introduced by CAPS projects to the specific aspects of social interaction at micro and meso level. At micro level the methodology explores the changes that have occurred at the individual level of project users and - to a certain extent - of project partners. At meso level, it investigates social relations at group and organisational level, such as the impact on local communities and on specific social groups (like those at risk of social exclusion).

The social impact index is composed of 6 sub-categories, illustrated in detail below:

- **Impact on community building and empowerment:** it gathers data about the users of the CAPS platforms and how they use these platforms; investigates the relationship between online communities facilitated by the CAPS platforms and local communities not directly engaged with the platforms; investigates how CAPS projects can support the empowerment of online and local communities; investigates the CAPS community itself, the internal level of collaboration and the relationship with other Social Innovation actors and actors from other domains. This social impact sub-category corresponds to a synthetic index which is composed of 5 dimensions:
 - Online community building
 - Online community empowerment
 - Local community building
 - Local community empowerment
 - Impact on Social Innovation and CAPS communities
- **Impact on information:** under this subcategory, the focus is on projects' capability to provide access to high-quality information, provide users with the necessary tools for navigating information and positively influence information asymmetries. This subcategory investigates an aspect that has strong in-

fluence on other aspects, such as “Impact on ways of thinking, values and behaviours”, “Impact on community building and empowerment” and political impacts as a whole. In fact, having access to information and being supported in sharing information is a condition sine qua non for changing opinions, habits and being civically and politically engaged. The impact on information index comprises three dimensions:

- Access to information and sharing of information
 - Quality of information
 - Data management policies
- **Impact on ways of thinking, values and behaviours:** this area of impact tackles the changes introduced in citizens’ way of thinking and behaviours, especially as related to more sustainable individual and collective behaviours and lifestyles. It is not easy to monitor changes in opinions, ethical orientations and behaviours since, even when observing a shift, it is very difficult to associate that change to a defined input. The issue is complicated by the fact that changes in opinions and behaviours are influenced by the number of people that decide to assume certain behaviours: the more people assume a new behaviour the easier it becomes to see this change spreading across the population (network effect). In order to overcome the attribution problem researchers normally use user/target audience surveys and, when possible, compare them with control groups not exposed to the awareness raising campaign or related actions. Therefore, quasi-experimental research design is the preferred method for this kind of analysis. The IA4SI methodology follows this path and investigates this area of impact mainly through user surveys. The dimensions investigated within this index are:
 - Changes in opinions/ways of thinking
 - Changes in behaviours
 - **Impact on education and human capital:** this subcategory investigates if, and to what extent, projects are working on the transfer of their research results and, more generally, the knowledge

made available by the projects to users, training systems (the school system and universities) and workers. With reference to human capital, this term refers to the competencies, skills and abilities that workers have or acquire through formal and informal education and on the job training and that constitute an important productive factor of any organisation (profit or not-for-profit) (Schultz, 1961). The aim is to understand if CAPS projects improve the human capital of their users and/or of the professionals working in the projects. Special attention is dedicated to e-Skills as a lack of such skills may result in the impossibility to benefit from Digital Social Innovation.

- Training provided by the project
- Impact on human capital
- Change in training curricula, educational policies and personal investments in education
- **Impact on science and academia:** this subcategory gathers information about the projects' outputs in terms of knowledge creation and about the channels they use for transferring such knowledge outside the CAPS domain. It investigates the scientific impact of projects and their capability to make their research results available to a wide audience. With this subcategory it is also possible to see if the projects are able to support new research or positively influence research-related working routines (Passani et al., 2014). Attention is dedicated to the interdisciplinary dimension of the CAPS projects, which is particularly evident when looking at the consortium composition and which deserves closer analysis. This subcategory includes the following three dimensions:
 - Knowledge production
 - Knowledge sharing
 - Impact on research processes and academia
- **Impact on employment:** IA4SI uses this subcategory to analyse two related impacts: on the one hand it investigates if, and to what extent, projects contribute to the creation of new jobs and, on the other hand, it looks at if and how their

outputs will change the working routines of their users and stakeholders. The methodology considers this subcategory relevant even if these impacts occur, generally, when the EU projects have needed, when and if the product/service developed by the projects is exploited. The dimensions relate to this analysis are:

- Impact on job creation (directly created by the projects)
- Impact on European employment and within the social innovation sector
- Impact on working practices and routines

2.4 Economic impact

This area of impact and associated indices consider all the relevant economic results that the projects produce along their lifetime. The methodology provides an economic assessment of the projects focused on their microeconomic impacts, especially in terms of positive economic results for individual Consortium partners, end-users and general stakeholders of the projects. It does not aim to explore the macroeconomic impacts (i.e. the effects produced on Gross Domestic Product) nor to discover the direct impacts at program/policy level.

The economic impact has been articulated in 4 subcategories:

- **Your Output:** this subcategory is aimed at assessing the economic impact of individual CAPS project output. Indeed, is not always the case that an Output developed by a project can achieve a relevant economic impact. It is therefore relevant to analyse the economic result achieved by each technological output. This dimension takes into account the costs of development and maintenance of the outputs and the willingness to pay for or to donate to the outputs by its users. This subcategory is also relevant for the analysis of future sustainability of the CAPS projects outputs.
- **Users Economic Empowerment:** this subcategory of impact

aims to analyse the contribution of CAPS projects in supporting users to increase their wealth. It investigates the project's capability to increase users' capability to access to finance, both through emergency finance or crowdfunding initiatives. Moreover, this section analyses the impact of CAPS projects on encouraging their users to develop new business activities, entrepreneurial initiatives and new business ideas. Related to this dimension is also the capability of the project to increase income for the users of the project, to diversify income resources and the resilience of users coping with potential unexpected financial crises. The dimensions of this subcategory are:

- Impact on access to finance
 - Impact on entrepreneurship and income generation for the users
- **The Economic Value Generated by the project:** this subcategory is aimed at assessing the economic impact developed by the CAPS projects through their outputs. It evaluates the economic impact of the outputs developed by the CAPS projects in terms of Cost-benefit and Return on Investments (ROI), also including the analysis of digital social innovation ROI of CAPS projects, derived from Etlinger and Li (2011) that the research team adapted to the specific context of the Digital Social Innovation. This dimension includes another indicator relevant within the context of Social Innovation, which is the analysis of the altruistic use, which aims to analyse if and how much the users of CAPS projects are potentially willing to pay for the services developed by them as defined by Murray et al. (2010b). The subcategory also analyses the contribution of the project for the creation of new business models, the development of new market opportunities for the project partners, the increase in informal collaborations with business partners and collaboration with the industry. Moreover, it provides an analysis of projects' competitiveness and their capability to keep pace with competi-

tors. This area also considers the success of the exploitation and transfer activities of the CAPS projects, in terms of number of persons dedicated to exploitation and innovation transfer within each project consortium and number of activities for the transfer of each project output. The area is divided into three main dimensions:

- Economic results
 - Business models
 - Competitiveness and exploitation
- **Impact on ICT driven innovation:** this area assess the impact of the CAPS projects in terms of developing innovation. It identifies the type and nature of the product innovation, including the analysis of technological readiness level of the platform, the contribution of the project to increasing the efficiency and quality of already existing technologies and products. Moreover, it analyses the projects' ability to improve processes for the creation of new social ideas to introduce a new, or significantly improved, service offering that will reduce the actual delivery time and the delivery time of new service offerings. It also investigates the impact of the project on the definition of new organizational models enabling the users to better structuring their activities, to improve access to spaces for collaboration, to develop routinized processes for capturing and using new ideas in new or improved service offerings and to implement new concepts for the structuring of user activities. Finally, it evaluates the contribution of the CAPS projects for implementing new methods for identifying user needs, the collaboration of users in the development of technological outputs producing a cost saving and improving the quality of the technological outputs. It is divided into 4 main dimensions:
 - product innovation,
 - process innovation,
 - organizational innovation
 - user-driven and open innovation

2.5 Environmental impact

The environmental component is an addendum to previous methodologies, which inspired the current one. Since tackling environmental sustainability issues was among the goals explicitly identified by the CAPS programme, this dimension was included and developed taking into account the fact that digital social innovation projects aim to produce intangible goods such as networking platforms, knowledge sharing, virtual tools as well as to intercept and involve the highest possible flows of users, upon which the effectiveness of the projects themselves are said to depend. This means that their impacts on the environment are bound to be quite similar in nature to those of social media and computer-mediated social networks (CMSN, as in Oakley and Salam, 2014), and deliver their impacts from two different perspectives: through the environmental impact of the projects themselves, and through the impact on users' environmental behaviour. Each of the following four dimensions identified and explained in detail below are addressed taking into account these two perspectives:

- **Greenhouse gases emissions** (including energy efficiency and production of energy from renewable sources): given the nature of DSI activities, the methodology identified travel as the most significant source of greenhouse gases emissions. The methodology also takes into account compensation activities, energy consumption and the percentage of renewable/efficient energy purchased. Concerning user behavioural change, four indicators assess the potential outcomes of a DSI project that engages in GHG reduction and energy efficiency: user compensation activities, user shift to renewable/efficient energy provider, user awareness and user activation.
- **Air Pollution related to transport:** one of the main causes of the rapid increase in urban air pollution is the inefficient use of fuel for transport, together with power generation and other human activities related to household management. The me-

thodology established that although it is not possible to ask projects to be accountable for the exact measure of their contribution to urban air pollution, it is still very useful for them to conduct a qualitative assessment on their sensitivity towards this issue, for both the project and their users. Where there is a high engagement with the issue, the projects are required to briefly list the undertaken actions (i.e. internal policies, awareness initiatives, etc.).

- **Solid Waste:** defined as “substances or objects, which the holder intends or is required to discard” (EC, 2008: 4). The methodology aims to make both a quantitative and qualitative assessment of how the projects dispose of the main waste they produce via their activities. The high level of digitalization of CAPS work and tools makes the Waste Electrical and Electronic Equipment (WEEE), the most significant waste produced by these kind of projects. The European Union has currently developed the most advanced legislation on WEEE (Directive 2012/19/EU). The methodology also assesses the projects’ engagement with user awareness and activation about the overall waste issue.
- **Sustainable consumption of goods and services:** defined by the Oslo Symposium (1994) as: “the use of goods and services that respond to basic needs and bring a better quality of life, while minimising the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardise the needs of future generations”. In this subcategory, the methodology gathers data about sustainable management of the projects’ procurement, events and services. The projects were also required to illustrate to what extent, if any, they contribute to their users transiting towards sustainable consumption and to raising overall awareness about this issue. The methodology does not assess the sustainability of the projects’ production in terms of raw materials purchasing and processing, as they generate mainly intangible goods.

2.6 Political impact

The political impact index was initiated by looking at the capability of a project to have an impact on “participatory democratic processes” but, more generally, to have an impact on the users and on European citizen political participation overall. The political impact index is divided into the following sub-categories:

- **Impact on civic and political participation:** political participation is not limited to the act of voting in regular elections but it comprises a larger set of actions which have the final aim of influencing governments. Civic participation, which can be seen as a complement of political participation or as part of political participation, refers to the processes by which citizens take part in the life of a community, improve the conditions of its members and shape its future development. The first sub-category, which corresponds to a dedicated index, is divided into the following dimensions:
 - Impact on citizens/users political awareness
 - Impact on citizens/users civic participation
 - Impact on citizens/users political participation
- **Impact on policies and institutions:** this section evaluates projects’ and project users’ capability to influence policies, change existing institutions or create new institutions. The following dimensions compose the second sub-category:
 - Project capability to influence policies and institutions
 - CAPS users impact on policies and institutions.

2.7 Transversal indicators

The aim of the transversal indices is to capture attributes and characteristics of the project outputs and activities that, being a specific kind of social innovation, are expected to be more efficient,

effective, sustainable and just that alternative solutions (Deiglmeier and Miller, 2008:36)

- **Efficiency:** describes the extent to which time or effort are well used for achieving the expected results. It is often used with the specific goal of relaying the capability of a specific application of effort to produce a specific outcome effectively with a minimum amount of waste, expense or unnecessary effort. Efficiency has widely varying meanings in different disciplines. In general, efficiency is a measurable concept, quantitatively determined by the ratio of output to maximal possible output. In the IA4SI context we are interested in evaluating both the economic efficiency of project activities and its environmental efficiency.
- **Effectiveness:** this term refers to the capability of producing an effect and is most frequently used in connection with the degree to which something is capable of producing a specific, desired effect. Effectiveness is, generally speaking, a non-quantitative concept, mainly concerned with achieving objectives. Therefore, it is normally used for evaluating the outputs of a project and to what extent the outputs produced are aligned with the planned outputs.
- **Sustainability:** by assessing CAPS sustainability IA4SI methodology intends to analyse if and to what extent the projects and their outputs are going to survive to the end of the funding period. It is of particular interest to try and predict whether the impacts produced by project are going to last over time and how long it will continue to deliver benefits to the project beneficiaries and/or other stakeholder after the EU's financial support is expired.
- **Fairness:** index describes the capability of projects to promote social innovation by taking into account equality issues such as the capability of engaging people belonging to categories at risk of social exclusion, foster equal opportunity between men and woman, support users in having access to no-biased information and avoid the re-production of social and econo-

mic disparities. In fact, there is the risk to engage in project activities social actors that are already sympathetic with the social issues tackled by the project. In other terms, there is the risk to engage people that are already very active at social, economic and political level and contribute to the widening of the gap between active citizens and un-active citizens.

Next chapter provides the description of the CAPS domain aggregated analysis and the results that CAPS projects achieved doing the self-assessment exercise.

At a glance: the Methodology

- The methodology builds on previous and already tested and approved methodologies, adapted through literature review and a participatory approach that engaged DSI projects and external stakeholders (social innovation experts, citizens, project users).
- The methodology applies the Impact Value Chain approach (also known as Logic Model), analysing the projects according to their inputs- outputs-impacts chain.
- The methodology developed eight synthetic indices: four “vertical” indices related to key areas of impact (social impact, economic impact, environmental impact and political impact), and four transversal indices that provide information about the process followed by the CAPS projects in determining their impacts (fairness, efficiency, effectiveness, sustainability).
- The gathered data are normalised and aggregated to generate values evaluated according to a 0-1000 scale.

CAPS domain assessment results*

This chapter presents the main findings of projects and domain impact assessment. On the basis of the methodology presented in the previous chapter the IA4SI team has performed the **assessment on 11 CAPS projects by analysing their inputs, outputs and impacts results**. The sample observed is not big enough to consider the results as a statistical benchmark but the aggregated analysis provided in the following paragraphs helps in better understanding how the CAPS and DSI are featured and are evolving.

3.1 CAPS features

The 11 assessed CAPS projects have been funded for a **total of € 17,204,988** and they did not attract any other funding different from the European Commission. The budget was divided among 6 STREPs (small and medium-size research projects) receiving 68.62% of funding, 4 CSA (coordination and support actions) receiving 14.04% of funding and 1 IP (large research and development projects) receiving 17.34% of funding.

The projects were carried out by **71 partners** with 3 of them participating in more than one project; thus 68 organisations were involved in our analysis. As represented by the figure below, the large majority of the assessed CAPS partners belong to the United Kingdom with 18 of partners (25%), followed by Italy (10 partners, 14%) and France (8 partners, 11%).

* The authors of this chapter are Francesco Bellini (Eurokleis), Alessandra Prampolini (T6), Iana Dulckaia (Eurokleis) and Antonella Passani (T6)

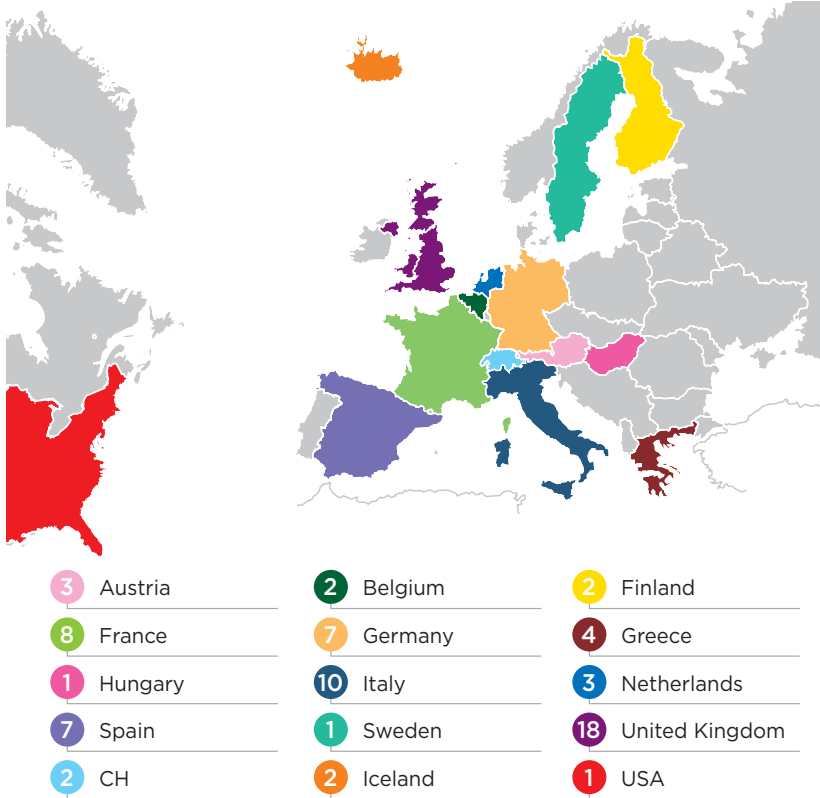


Fig. 8 - Consortia composition per countries

As emerges from literature (see Chapter 1) the main protagonists of DSI are: social enterprise charity foundations, business, grass roots organisations, academia and research, government and public sector. In our sample based on 11 CAPS projects, **most of the organisations come from the education and research sector (56%)**, 23% of the sample is represented by SMEs, 14% by other typologies of actors and 7% by large enterprises. The presence of numerous education and research organisations is coherent with the fact that most of the projects consider themselves as mainly research projects.

Typology of partner

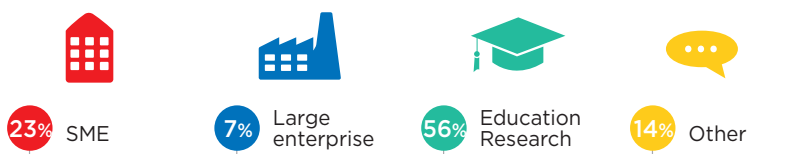


Fig. 9 - Consortium composition per partners

Most of CAPS coordinators (9 out of 11) are experts and already participated in previous EU projects in the ICT sector.

3.1.1 CAPS stakeholders

Regarding CAPS stakeholders, all projects are collaborating with different actors in each of the four general categories of stakeholders identified by the methodology: Research, Business, Civil Society and Policy Making.

CAPS projects tend to relate more with actors within the Research domain (where the mean of CAPS which is connected with each stakeholder group is 7.4) and Civil Society (7.1). Business is also an area where CAPS actively engage with stakeholders (6.3), while Policy Making is the less relevant (4.4). This result is coherent with the fact that, as anticipated, most of the organisations participating in CAPS projects come from the education and research sector.

One significant result is that **all projects recognise the same six specific stakeholder categories:**

- 1 Universities in the Research category,
- 2 NGO,
- 3 Associations and Charities,
- 4 Activists and Social Movements and Citizens at Large in the Civil Society category
- 5 National and EU Policy Makers,
- 6 Governmental Bodies and Officials in the Policy making category.

The figures below illustrate the relevance of each stakeholder group for each one of the four categories (percentage and absolute values).

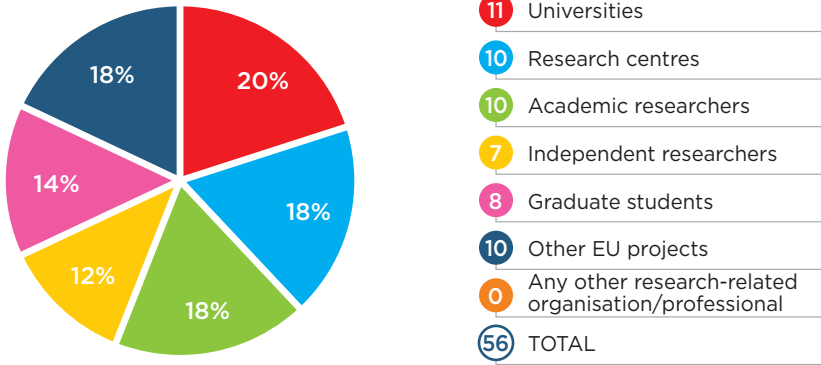


Fig. 10A - Presence of stakeholders' groups in the research category

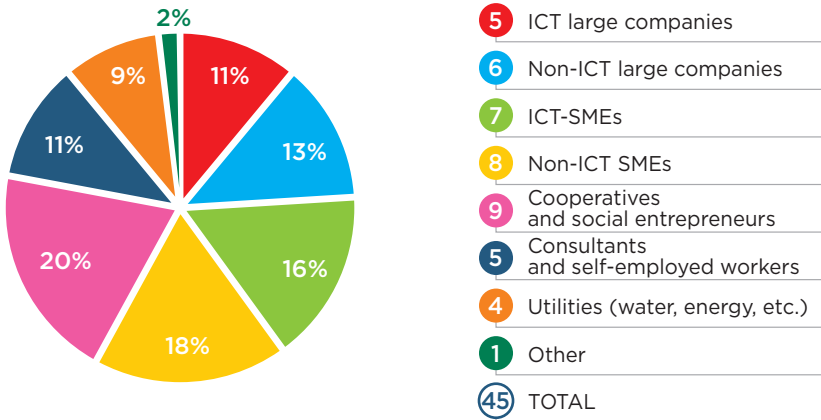


Fig. 10B - Presence of stakeholders' groups in the business category

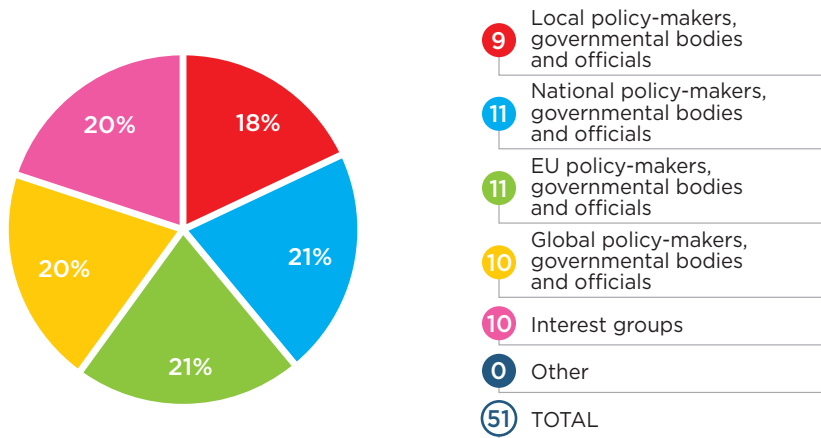


Fig. 10C - Presence of stakeholders' groups in the policy-makers category

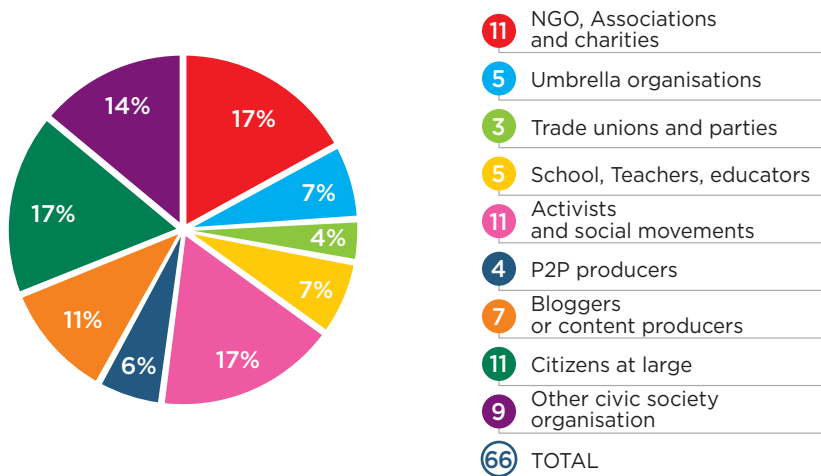


Fig. 10D - Presence of stakeholders' groups in the civil society category

3.1.2 CAPS end users

With regard to CAPS end users, **1) social innovation organisations and networks, 2) social movements and activists and NGOs, 3) associations and charities and 4) citizens** emerge as the main categories of users for the CAPS project (13%), closely followed by researchers (11% each). SMEs, other CAPS projects, large companies and software developers meanwhile make up the minority of end users (10%).

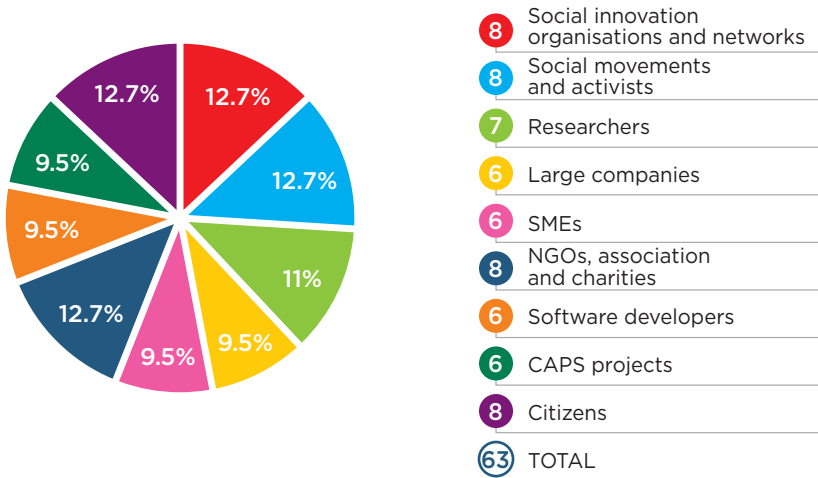


Fig. 11 - Typologies of End Users

Moreover, the main activities developed by the users on the CAPS platforms are: **Sharing ideas (31%)** and **Debating (24%)** account together for more than 50% of the total activities performed by users. Minor but still significant activities are those dedicated to collaborative production (17%). No Money Transaction and Services activities are performed on any of the current platforms

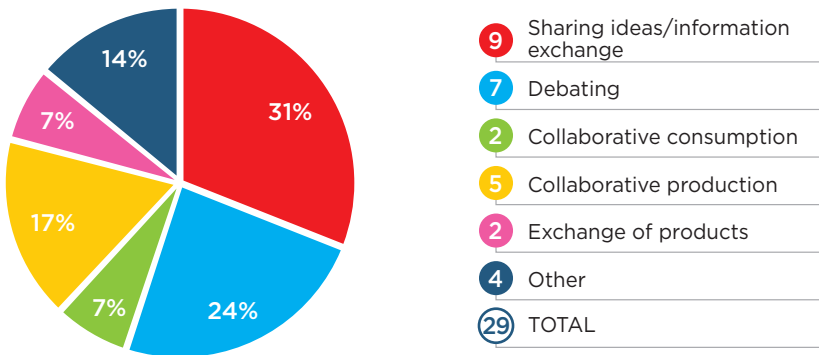


Fig. 12 - Activities developed by End Users on CAPS platforms

3.2 CAPS Outputs

With regard to the project outputs the following results were highlighted.

The technological outputs developed by the CAPS have **reached 409,328 users**. In total the CAPS projects have **developed 53 pilots**. Almost all the CAPS projects have developed software, online platforms and tools that have different typologies and aims. Here are some examples:

1 Software related to environmental problems

- Media Watch on Climate Challenge (Knowledge Aggregation and Visual Analytics Platform)
- EnergyQuest (Application for raising energy consumption of house appliances)
- Environmental Indicator Extractor (A web service that extracts from text mentions of environmental indicators)

2 Online tools related to disability issues

- Wheelmap (Platform for collaborative tagging of places according to wheelchair accessibility)
- Wheelchair Navigation App (Mobile app for wheelchair navigation)
- OSMatrix (Tools for visualising accessibility related data on OSM)

3 Software related to Collective Intelligence

- DebateHub (Provides an intuitive interface for large-scale argumentation and advanced analytics and visualisations to enhance sense making, attention mediation and community moderation.)
- Assembl (Software application that allows people to work together productively. It reduces the chaos of working in large group and facilitates the emergence of innovative, new ideas.)
- Collective awareness platform (Crowdsourced idea platform and social network dialogue system)

4 Policy-making tools

- Decisions (Tool to search and subscribe to the municipal decisions in Helsinki)
- Mooncake (Tool to securely notify members of events/activity on d-cent projects ecosystem)

5 Tools for online data sharing

- DataBait (Prototype for improving the understanding of the impact of online data sharing and for offering better control of these data).

Regarding the scientific outputs, CAPS projects have published 78 papers, of which 73 contributing to better define and understand (Digital) Social Innovation. The papers elaborated by projects mostly related to the activity provided by CAPS. The most common topics addressed by the papers are:

- Mitigation and Adaptation to Climate Change
- Integrating options for wheelchair users into an open route planning service: state-of-the-art and open challenges.
- Collective Intelligence for the Public Good
- Privacy in location-based social networks

Considering the patent and IPRs developed by the projects it can be noticed that CAPS project are oriented towards an open source, open access, copy left approach to knowledge management and distribution and, for this reason, only one project developed 4 patents, while the others have preferred alternative forms of intellectual property right management.

3.3 CAPS Impacts

Before describing the results obtained by the projects at an aggregated level, it should be mentioned that CAPS projects had the possibility to select their areas of impact for three out of four vertical indices identified by the methodology (Social, Economic and Political). For the Environmental impact the IA4SI team made the assumption that all the sub-indices were equally relevant).

The following paragraphs show the aggregated results of the self-assessment for each of the areas of impact.

3.3.1 Social impact

Regarding the social index, most CAPS projects identified their main impacts in the Community building and empowerment area and in the Information area (22%), followed by Ways of thinking, Value and behaviour (20%) and the Science and Academia (17%). Less frequent but still present are impacts on Employment and Education and human capital.

CAPS projects average score for social impacts is 509. This, compared to the other areas of assessment, is the second ranking (coming after economic impacts). This result, though good, is still not outstanding, considering that it is calculated on a 0-1000 scale. It should be noted that one project selected most of the areas of impacts, but entered very little data.

PROJECTS' ASSESSMENT RESULTS				
0 - 200	201 - 400	401 - 600	601 - 800	801 - 1000
509				
Poor	Fair	Good	Very Good	Excellent

Fig. 13 - Social impact average score

Considering all the CAPS projects, the areas of social impact that appear **most promising are Impact on Science and Academia and Impact on Education**, even though in the second case only five projects entered their data. Impact on more CAPS-specific social impacts such as impact on information is still quite high, while impact on thinking, values and behaviours is less evident but this is due to the fact that the sample is quite small and only some projects directly addressed one or more of this areas.

The following paragraphs explain in detail the main results obtained by CAPS for each area of assessment and their implications.

Impact on community building and empowerment

This area of impact is, among all areas of social impact, one of the most popular in terms of projects that provided data implying that it reflects one of the most common and important goals and activities of the CAPS. All projects selected it and ten of them entered enough data to run a proper assessment. Among these ten, though, one filled in just the amount of data necessary to evaluate its impacts, with very little other information. Consequently, the average result is much lower than for other CAPS and it significantly affects the aggregate average, which is 448 for all nine projects and 498 taking out the lowest outlier.

This area is also the most complex area of assessment due the variety of indicators it contains.

Most of the **CAPS developed their own platforms building on pre-existing online platforms or online communities of users** and, where data were available, drastically improved the number of participants and content for those platforms.

A key aspect of CAPS contribution is the **willingness to increase of trust among users**, together with their capacity to foster local communities and to provide them instruments for better organising themselves. Moreover, most CAPS (7) developed a high average of 21 collaborations with other actors in the Social Innovation domain, with one really active project that developed 80 collaborations. Collaborations outside the Social Innovation domain are even higher, and 8 projects reported to have developed 30 (average) of them with one project that developed 100 collaborations. Another aspect that was investigated is the collaboration among CAPS projects or, in other terms, the analysis of CAPS community itself.

In order to analyse this aspect the Social Network Analysis was applied; the resulting collaboration network is depicted in Figure 14. Projects are represented by circles (nodes, in network analysis

jargon), and two projects are connected by a line (edge) if some form of collaboration was reported by at least one of the two partners. The size of the nodes is proportional to the number of collaborations in which a project is involved (degree); hence, the higher the number of collaborations, the larger the node. Since links between projects can be conceived as the channels through which material and immaterial resources are exchanged (including information, coordination, experiences, skills, tacit and formalized competences), the graph in the figure below represents the knowledge and resource infrastructure of the project network.

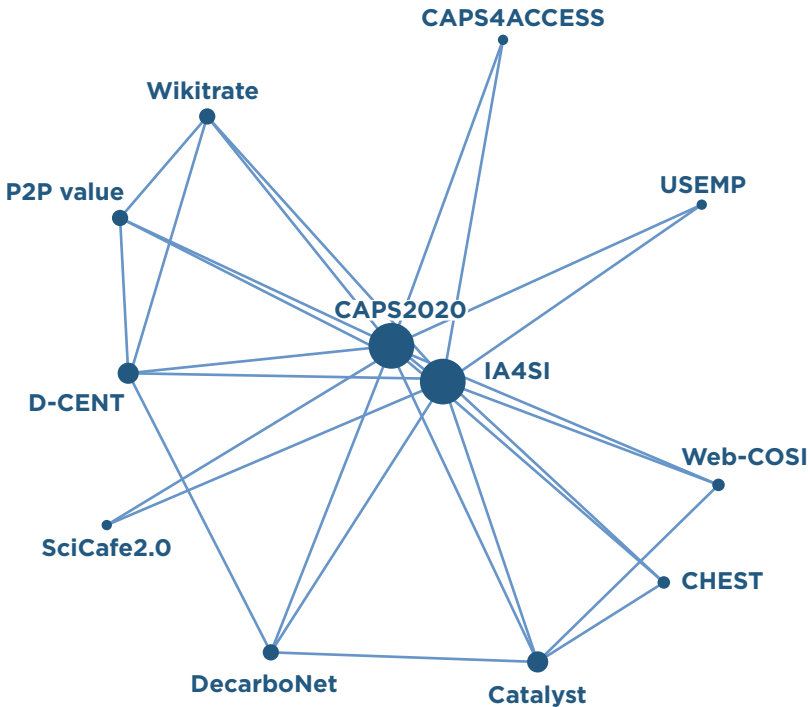


Fig. 14 - Collaboration network between the analysed CAPS projects. Layout algorithm: Fruchterman - Reingold. Size of nodes proportional to nodal degree.

The network comprises 12 nodes and 28 edges; its density (the ratio between the actual collaborations and the maximum possible number of collaborations for a network of the same size) is equal to 0.42. The network is therefore characterized by a relatively **high propensity to collaborate**, as also confirmed by a median number of collaborations per project equal to four.

The structure of collaborations is however uneven, since the network is dominated by two prominently active projects whose degree (number of collaborations) is significantly larger than the median: IA4SI and CAPS2020¹¹. Both projects report 11 active collaborations, which means that they are collaborating among themselves as well as with every other project in the network. This result is not surprising considering the nature of these two projects: one supporting CAPS project in understanding and maximising their impact and another providing support for DSI initiatives.

Impact on information

The average score for this area of impact is quite good, 612, and 6 projects address it.

Six projects indicated the importance of **improving user access to a range of local and international news sources and to independent news sources**, with a very high average (more than 5 on the Likert scale). Similarly, CAPS put a great emphasis on relevance of **reducing information asymmetries experienced by users** (more than 5 on average on the Likert scale). Among short and long posts, the projects made available **more than 5 million articles on their platforms**.

Impact on ways of thinking, values and behaviours

This area of impact received the lowest average score (282) mainly because, among the nine projects that selected it, none of them was able to report punctual activities aiming to influence user ways of thinking and behaviours. Most CAPS do not develop campaigns focused on specific topics, which makes it difficult to assess the actual achieved results.

¹¹ Formally speaking, the project collaboration network is characterised by a network degree centralization index equal to 0.63. The degree centralization index varies between 0 and 1, with values closer to 0 indicating that degrees are evenly distributed among the nodes in the network, and values closer to 1 indicating the presence of wide variations in terms of nodal degrees

When asked to list the topics about which they expected to see a change in user behaviours or values, the projects listed a relatively high variety of issues, from environmental, to data privacy, to well being, to social inclusion. This makes CAPS potentially quite significant since, as anticipated, they are mainly catalysts that can **contribute to improved processes and knowledge flows in many fields, potentially influencing ways of thinking and behaviours.**

Impact on education and human capital

Only five projects entered enough data into this area to allow a proper evaluation, achieving an average score of 561.

CAPS activities for this area of impact focus mainly on providing training (they offered an average of 7 hours of training to 11 people on average each time). Only one project reported to support the personal development of users, i.e. character development, critical thinking and creative problem-solving and influencing the curricula for secondary and higher education on educational policies and on educational investments.

A very relevant indicator for all projects that entered data is the **improvement of skills for people in the consortium**: they all valued it more than 5 on the Likert scale on average.

No project indicated developing activities to support the acquisition of digital competences, digital literacies competences, e-Skills and the reduction of digital divide, which means that **ICT skills are perceived by CAPS as a mean to a goal and far less as an awareness and educational topic.** This risk may drive to the exclusion of potential users with low e-Skills and **enlarge the divide** between already connected and engaged persons and those at risk of social and digital exclusion.

Impact on science and academia

This area of social impacts got the highest average score, 698, which is a good result on a 0-1000 scale. Eight projects selected it and filled in data for the assessment and the most remarkable observation deriving from the overall picture is that, a part from

two projects, in general CAPS do not think that their results will have an impact on the everyday life of academia institutions, but six of them think that they will contribute to **improve research processes within and outside the consortium**. As anticipated, CAPS tend to tackle processes and to offer instruments to improve practices and enhance flows of information, which is quite relevant for their impact on Academia.

Another significant result is the **relevance of interdisciplinary activities** for all projects. The most frequent disciplines among the ones listed by CAPS are computer sciences and social sciences.

CAPS projects also contributed in different ways to the diffusion of scientific knowledge. CAPS developed a total of 78 papers, 73 of which contribute to the better understanding of Digital Social Innovation. One project got 5 non self-citation and four CAPS delivered an average of 5 articles published in non-specialised magazines and newspapers. Seven projects reported following an open access policy for dissemination, all of them use their project websites to share research results (but the number of articles or deliverables downloaded is unknown). With regards to social networking, seven projects reported having an average number of 376 Twitter followers and six projects indicated 811 Facebook friends on average.

Eight projects reported having presented their research results in 17 events (average) each.

Impact on employment

CAPS achieved quite a good score, 596, and five projects entered sufficient data to generate results for the assessment.

Three projects only think that their activities will have an impact on overall employment, while all projects strongly confirmed that their outcomes will contribute to **improve the working practices** of the third sector and of people/organisations working in the field of Social Innovation.

For those five projects, the average number of people employed to implement the project under assessment is slightly less than one full-time employee on average. All those persons will keep working after

the end of the project, which is a highly significant. Among the researchers working in the project, at least one of them on average is a young researcher (less than 35) and around 40% are women. At the time of the self-assessment, one project only indicated having generated a start-up or spin-off.

3.3.2 Economic impact

According to the projects, their economic impacts are going to take place in such areas as ICT driven innovation (45%) and Economic value generated by the project (40%); very low is the expectation to produce an impact on Users Economic Empowerment (15%). The average score obtained by the projects for the economic impact is 600 (on a 0-1000 scale). Compared to the other areas, the economic impact is the first in terms of scoring and this reflects the fact that the **CAPS projects were able to identify some benefits** generated from their activities even though most of the CAPS were not aware that their outputs should have been able to support users to increase economic results. Moreover, it should be noticed that 10 projects have provided enough data in order to run the assessment and have obtained a very high score in such sub-categories as impact on product innovation, impact on process/service innovation, impact on user driven & open innovation. The high quantity of data provided for these sub-categories can explain why economic impact has a better result than, for example) a social one.

PROJECTS' ASSESSMENT RESULTS				
0 - 200	201 - 400	401 - 600	601 - 800	801 - 1000
600				
Poor	Fair	Good	Very Good	Excellent

Fig. 15 – Economic impact average score

Looking at the weaknesses emerged, it is worth noticing that **crowdfunding initiatives have not at all been considered** by the CAPS projects and this is surprising considering they are working within the context of Digital Social Innovation. Moreover, the creation of entrepreneurial activities through the development of the project outputs and platforms is not relevant for the CAPS projects, which are **more focused on technological development and on the potential social impacts** that their platforms can have on society as a whole. It is also not clear how the CAPS projects will be able to sustain the maintenance of the technological platforms after the end of the projects. It is evident that there is not a clear strategy for the sustainability of the CAPS projects, since none of them have yet attracted funds outside of the European Commission.

It is important to note that the CAPS projects ending in 2016 are the ones that achieved the higher economic impact score probably due to the fact that IA4SI supported them in thinking of their economic impact and sustainability while those ended in 2015 were not able to fully incorporate IA4SI suggestions.

It is also not surprising that the project that has achieved the best score in the economic impact section is the only CAPS that is directly aimed at creating privacy-aware tools and applications for direct democracy and economic empowerment.

Impact on users economic empowerment

User economic empowerment obtained a score value equal to 536, but this result should not be considered per se, since this sub-category has not at all been considered by the CAPS projects and only one project, the IP, has shown to have a high score of 750 (on a 0-1000 scale). Indeed, the project increases the access to finance of its users by providing € 2,499,280 through calls for ideas and project proposals. The project also supports the **creation of entrepreneurial initiatives and 64 new business ideas have been developed by project users**. It is also highly and actively supporting its users to increase their incomes, to diversify their resources and to increase their resilience to cope with economic crises.

Impact on ICT driven innovation

The best result has been achieved by the Impact on ICT driven innovation, with a score of 784 (on a 0-1000 scale). Most of the CAPS projects have declared that they produce an impact on ICT Driven Innovation. The project which achieved the best score on this subcategory is a STREP project with a score of 930. It is a very positive result in terms of impact on ICT driven innovation and it is related to the **capability of the project to produce the highest results on both product, process and on organisational innovation**. The project is also increasing the efficiency and the quality of pre-existing technologies through the different outputs developed.

The other CAPS projects have shown to have an impact either on product or process innovation. Almost all CAPS projects have an **impact on organisational innovation**. The most relevant results in terms of CAPS domain have been achieved as impact on the User Driven Innovation and Open Innovation categories. Indeed, almost all the CAPS projects have declared **collaborating with their users from the beginning of the project** for the development of their technological outputs. The CAPS projects are using **open source software** and disclose all project results through an **open and widely shared process**.

Impact on the economic value generated by the project

The lowest value among all economic sub-indices has been achieved by the Impact on the Economic value generated by the projects, which is 502 (on a 0-1000 scale). The project which achieved the best score on this subcategory is a STREP project.

This project contributed in most of the variables of the impact on the economic value generated by the project, since it contributes through its tool to highly improve the intellectually resource pooling for its users. Moreover, the project has also already **drafted a business plan for the commercialisation of its outputs** and participation to the project helped consortium partners to sign 5 commercial contracts. Project partners also collaborate with large companies from the industry sector and produce impact on existing value chains. The participation of the consortium partners

helped them to keep pace with their potential competitors. Another relevant sub-index of the impact on the economic value generated by the project is constituted by the digital social innovation ROI, to which the CAPS projects were not able to contribute in a sensible manner. Indeed, only one project, a CSA focused on organizing an annual international conference on CAPS to increase the visibility and impact of all CAPS projects in Europe, has proved to have generated very relevant and positive results.

3.3.3 Political impacts

The CAPS score on political impact ranked third among the four areas of impact and quite low also in absolute terms, as it reached only 396 on a 0-1000 scale. At any rate, two considerations are in order: first of all, for this area of impact the averages are not highly relevant at both aggregated and project levels, as only seven projects filled in enough data to proceed with the assessment on Civic and Political Participation and Policies and Institutions. Second, and consequently to the first point, looking at the results it is possible to notice that, among the evaluated projects, 6 of them performed quite well and achieved an average score of 556. This is a positive result, considering that most of the CAPS did not claim to have a priority political goal and that the achieved results are also consequences of actions and practices put in place to tackle the main issues targeted by projects. This last fact can be considered a relevant outcome of the analysis itself: for most CAPS engaging with political activities is often a result and an instrument to reach their overall goals, instead of an end in itself.

PROJECTS' ASSESSMENT RESULTS				
0 - 200	201 - 400	401 - 600	601 - 800	801 - 1000
396				
Poor	Fair	Good	Very Good	Excellent

Fig. 16 - Political impact average score

One significant finding that has emerged from analysing CAPS political impact is that the two sub-dimensions of analysis scored differently: the projects performed better in Civic and Political Participation (580 as the average score of the 7 evaluated projects); and worst in Policies and Institutions (379 for the seven evaluated projects, which becomes 543 eliminating the lower score). An overall consideration that emerges from this data is that the projects are more oriented to engage with user and citizen platforms than with institutions. Other punctual observations related to this point are reported in the following paragraphs.

Impact on civic and political participation

As anticipated, CAPS scored better regarding this area of political impact. This derives from the fact that collective awareness platforms aim mainly to empower users and citizens to address social issues and in general, make new tools and information available to them.

It is not surprising that CAPS identified the **increase in the number of grassroots actions** as a highly relevant indicator of political impact. Similarly, projects contributed a lot in **increasing the time spent by users in getting informed about local, national and international political issues**.

The CAPS projects general perception is that their activities contribute to the time spent by users in engaging in political activities and enlarging their political views and commitment. At any rate no CAPS has been able to register the potential change in topics discussed by users, despite some of them having developed tools to collect and analyse topic trends on their own platforms or on social media. This represents one more confirmation of the fact that political issues are not at the core of most CAPS attention.

Even more significantly, five projects entered data about the instruments developed by the project offering **new channels for civic or political participation**, and the average number of developed tools is 4, which can be considered a good result.

This confirms that CAPS engagement in these indicators of impact is not focused and frequent, but that when implemented, is effective.

Impact on policies and institutions

Overall results about this area of impact are low, due to the fact that **CAPS activities are less focused on targeting institutions and institutional channels.**

This result emerges clearly in that only one or two projects changed policies, regulations, laws or institutions, **only five project developed policy recommendations and only the users of two projects engaged** in developing policies recommendations themselves (1 for each project). Similarly, only one project registered user activities regarding changes in laws, regulations or institutions.

On the contrary, CAPS have a good perception of their **influence on the capability of users and civic society organisations to influence policies.** This implies that there is a gap between the projects' expectations of their impacts and the real outcomes of their activities in this area. This is confirmed by the fact that six of the evaluated projects organised an average number of almost 5 events with the aim to influence policies, and for each occasion, the average participation of institutions or policy makers was around 30.

This overall data means that, in the context of an area of impact that is not a priority for CAPS, some CAPS projects have developed aspirations and also opened channels to achieve results.

3.3.4 Environmental impacts

Environmental impacts were set by default in a equally distributed manner among Greenhouse gases emission, Air pollution related to transport, Solid waste and Sustainable consumption of goods and services and equal to 25%.

The average result of the CAPS projects on environmental performance was the lowest among the areas of impact under assessment (314). To a large extent this was expected and, before proceeding with the analysis of the single indicators, there are certain points that are worth specifying.

PROJECTS' ASSESSMENT RESULTS				
0 - 200	201 - 400	401 - 600	601 - 800	801 - 1000
314				
Poor	Fair	Good	Very Good	Excellent

Fig. 17 - Environmental impact average score

A preliminary observation is that the assessment of the environmental area of impact comes as an “addendum” to the overall methodology, which would usually only include other areas of impact. IA4SI decided to develop this area of assessment for two reasons. Firstly, the **methodology has been developed to be applicable beyond the perimeter of CAPS** or of the CAPS that have been implemented over the last two years, and it is expected that future projects belonging to the same and similar domains could have more explicit environmental goals among their targets. Secondly, tackling sustainability issues is one the funding criteria of the CAPS and environmental sustainability is definitely one of the most relevant, even if not the only one, in the domain of sustainability. The **Self-Assessment Toolkit** has become, then, an **instrument to raise awareness** and also to make some recommendations to projects that do not have environmental objectives.

A second general observation concerns the fact that the environmental impact of human activities is, by its own nature, negative. It is not possible to achieve a 1000 score in this area of impact, because this would imply no activities, no logistics, no production of any kind of material, and so on. Projects can theoretically get very close to a very high impact, implementing vir-

tuous environmental and compensation practices, but there is no benchmark for a perfect performance on the environment. So in this case and contrary to the other areas of impact, the single project result evaluation is based more on the comparison of averages and on single data than on the comparison to an ideal benchmark of excellence.

Impact on greenhouse gases emissions

The main source of negative impact for CAPS is logistics and the most relevant finding is that **no project performed any compensation activity for the emissions generated by the travel involved**. Moreover, the overall number of train trips accounts for less than one third of total trips by air in the European and Mediterranean region. Moreover, no project performed any activity aimed at improving user awareness and pro-activity about the issue, despite some CAPS tackling issues that are quite close to this topic.

Impact on air pollution related to transport

CAPS project do not seem to give much attention to this topic, both from the projects' and the users' point of view. Ten project entered data about consortium sensitivity and only five projects answered the same question about their users.

To improve this performance, as a day by day approach, the project partners could agree to try and **maximise the use of public transportation** and make it visible, for example, by officially choosing a weekly "Car Free Day" for all the project participants and promoting it on their platform, maximising the effect of their choice.

Impact on solid waste

This area got the highest score among environmental impacts (458), mainly because some practices involved are both more common and easier to implement, such as sorting out different kind of waste (all projects answered this question) or recycling ex-

cess materials. With the exception of one single project for one single indicator, no user engagement is performed, which is both expected and understandable.

The most unexpected result is for the production of WEEE (Waste Electrical and Electronic Equipment), where no project reported producing any waste of this kind. Considering that all project activities mainly use this kind of equipment, it was expected that during the projects life-cycle at least some projects would have produced some of this waste. For longer term projects the topic will require a more in depth monitoring.

Impact on sustainable consumption of goods and services

CAPS average score in this area of impact has been very low (137), which is understandable for the point of view of the users engagement, but could definitely be improved regarding projects' choices and practices. Environmentally friendly purchasing choices are quite accessible nowadays, and projects should take into account that publications and gadgets have their own impacts, both because of their production and of the waste they generate.

Project partners should agree on an internal policy that establishes that **no materials are going to be printed unless absolutely necessary** and with concrete opportunities for distribution. When possible, materials should be certified and recyclable. From a theoretical point of view, it would be better to avoid gadgets entirely. When this is not possible, because the presence of a small gadget can bring an undeniable benefit to the project's visibility, they should be purchased from a supplier who offers green procurement channels and produces recyclable gadgets, with all the due certifications. When distributing (and probably branding) a gadget, a project should try and look for environmentally friendly solutions (sustainable water bottles, rechargeable electronic devices, compostable gadgets).

The results of the transversal indicators assessment will be presented in the following paragraphs.

3.3.5 Efficiency

The average score obtained by the projects for the impact on Efficiency is quite low, 482 considering a benchmark of 1000.

PROJECTS' ASSESSMENT RESULTS				
0 - 200	201 - 400	401 - 600	601 - 800	801 - 1000
		482		
Poor	Fair	Good	Very Good	Excellent

Fig. 18 - Efficiency impact average score

The best score is obtained by one of the CSA projects with a result of 645.

The other 2 projects that are the most promising in terms of efficiency are purely research projects and STREPs. Since the efficiency index mostly considers the impact that the projects have on improving research processes for the CAPS domain and the quality and efficiency of pre-existing technologies, it is not surprising that research projects have achieved a higher positive impact on this index.

One of these two projects has an efficiency score equal to 556, however this result is biased by the fact that it answered only one third of the questions contributing to the index. In general, it can be noticed that the higher the response rate, the lower the projects efficiency score is.

This index also considers as relevant the variables related to environmental efficiency. However, very few CAPS projects contributed to increasing environmental efficiency by impacting on solid waste, sustainable consumption of goods and services or on the air pollution subcategories included in the environmental impact. Most of the projects show an important weakness in environmental efficiency in not being able to facilitate waste reduction and recycling.

3.3.6 Effectiveness

An average score of 508 was obtained by the projects on the Effectiveness impact. This is rather good (on a 0-1000 scale). It is important to highlight that only 7 of 11 projects provided more than 50% of answers contributing to effectiveness index. Therefore, the average result cannot be considered fully reliable.

PROJECTS' ASSESSMENT RESULTS				
0 - 200	201 - 400	401 - 600	601 - 800	801 - 1000
508				
Poor	Fair	Good	Very Good	Excellent

Fig. 19 - Effectiveness impact average score

Among these 7 projects the best score is 743, the second ranking project (643) answered all the questions that contribute to the Effectiveness index.

Four projects declared that they are contributing considerably at increasing the time spent by users in persuading friends, relatives or fellow workers about social/political issues and 6 out of 11 declare offering new channels/ways for civic participation.

Six projects show the capability to improve the civic participation of citizens belonging to groups at risk of social exclusion and/or discrimination. Six projects are able to impact, at a different magnitude, the increase of citizens/users participation in political campaigns.

The political participation of citizens belonging to groups at risk of discrimination is addressed by only 5 projects while transparency in institutions/governments is a quite sensibly addressed issue by 7 projects with an average score of 771. Only 6 projects believe they are able to positively influence transparency in parties/democratic processes, while 7 (with an average score of 800) are able to positively influence the capability of citizens/users and

civic society organisations to contribute to policies. The same projects (average score 771) enable citizens to influence transparency in institutions/governments. Six projects (average score 800) enable citizens/users to influence parties/democratic processes. The capability of intervening directly on policies/regulations/laws/institutions is addressed only by one project.

Finally, 6 projects produce some impacts (average score 633) on everyday life of academia institutions.

3.3.7 Sustainability

The average score of 383 obtained by the projects for the impact on Sustainability is very low (on a 0-1000 scale). It is important to highlight that only 3 of the 11 projects provided more than 50% of answers contributing to sustainability index. Therefore the results cannot be considered as fully reliable.

PROJECTS' ASSESSMENT RESULTS				
0 - 200	201 - 400	401 - 600	601 - 800	801 - 1000
383				
Poor	Fair	Good	Very Good	Excellent

Fig. 20 – Sustainability impact average score

Surprisingly, the projects that are the **most promising in terms of sustainability are Coordination and Support Actions and IP**. The IP project came out as highest ranking with a score of 755 (on a 0-1000 scale). This positive result is related to the fact that this is the only project that **highly contributes to fund other ideas within the digital social innovation context and actively supports them in developing sustainability plans in the medium and long term**. Unfortunately, in terms of impact on sustainability, it has neither been possible to calculate the Economic Net Present Value nor to carry out the analysis of Benefit/Cost, since the CAPS assessed

projects did not provide sufficient information related to the actual and potential commercialisation of their outputs. More specifically, they do not foresee a real economic exploitation of the CAPS platforms and do not think that users would be willing to pay to use the project outputs. Indeed, the most pressing issue in the near future for the CAPS will be related to the economic sustainability of these platforms, once European Commission funding will come to the end.

The fact that CSAs and the IP are more sustainable with respect to STREPs projects is an evident sign that **purely research projects are too focused on the development of technological outputs and on the engagement of the users, rather than on the future sustainability in the mid and long term.**

3.3.8 Fairness

The average score of 474 obtained by the projects for the impact on Fairness is rather low (on a 0-1000 scale). It is important to highlight that only 4 of the 11 projects provided more than 50% of answers contributing to the fairness index.

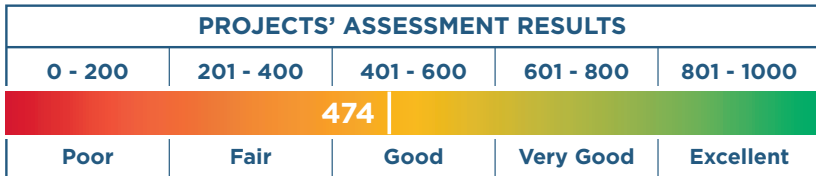


Fig. 21 - Fairness impact average score

Only 3 projects have indicated that they provide tools/instruments able to reduce power asymmetries in local communities/groups on their platforms. Regarding gender issues only 3 projects have provided the percentage of women (between 30% and 50%) in their user base and only one considered having initiatives aimed at fostering gender equality. Women are well represented in the project consor-

tia with an average of 47.4% across the 5 responding projects. Similarly, the same 3 projects were able to state the number of young users (between 15 and 30); these span from 35% to 80%. Categories at risk of social exclusion and/or discrimination are addressed but only 7 tools are proposed by 2 projects aimed at reducing power asymmetries in local communities/groups. Three projects employ young researchers.

At a glance: the main findings and results

- Typology of partners participated in CAPS projects: 56% of the organisations come from the education and research sector, 23% is represented by SMEs, 14% by other typologies of actors and 4% by large enterprises.
- In total the CAPS projects have developed 53 pilots with 409,328 users.
- CAPS projects best score under the Economic impact (600 on a 0-1000 scale) even though they are focused more on technological development and on potential social impacts rather than creating entrepreneurial activities.
- Sustainability plans and alternative forms of funding (i.e. crowdfunding) are not explored.
- CAPS projects' average score for social impacts is 509. This, compared to the other areas of assessment, is the second ranking (coming after economic impacts).
- CAPS developed a total of 78 scientific papers, 73 of which contribute to the better understanding of Digital Social Innovation.
- CAPS contributed to increase of trust among users, together with their capacity to foster local communities and to provide them instruments for better organising themselves.
- The CAPS score on political impact ranked third among the four areas of impact and is quite low also in absolute terms, as it reached only 396 on a 0-1000 scale.
- The average result of the CAPS projects on environmental performance was the lowest among the areas of impact under assessment (314).

IA4SI tools*

As we have already mentioned in previous chapters, IA4SI developed a set of online tools aimed at enabling the engagement and enhance the awareness of European citizens about CAPS projects. Together with the methodology, the tools are meant to support the next generation of CAPS projects in assessing their impacts and in getting an overview of the CAPS domain activities and results. New CAPS projects will have the opportunity to make use of the tools during their activities and possibly repeat the assessment more than once. Each time all projects will enter or update their data, every single project will get an updated version of its status and it will be also possible to monitor the progress of the entire domain. IA4SI wishes for a regular and effective use of its methodology and tools, and through this use it aims to give concrete contribution to the scientific debate about Digital Social Innovation. The tools are the Imact4you platform and SAT (Self-Assessment Toolkit) with the User Data Gathering Interface that are described in more detail in the following paragraphs.

4.1 Self-Assessment Toolkit (SAT) and User Data Gathering Interface (UDGI)

The aim of the Self-Assessment Toolkit (SAT) is to help CAPS projects to assess their socio-economic, environmental and political impacts. Each project, by simply logging in to the SAT, finds a list of

* The authors of this chapter are Marina Klitsi (ATC), Katriina Kilpi (iMinds) and Luca Satolli (Eurokleis)

questions to be answered in order to assess project impacts: some of the information is being provided by the projects themselves, while other is pre-filled by the IA4SI team, thanks to the activities done during the project mapping phase. The SAT visualizes the result of the impact assessment in a concise and user-friendly way.

SAT has been implemented based on the relevant user requirements and feedback, the IA4SI Methodology (see Chapter 2) and technical specifications.

As stated above, the toolkit implementation is accessible through the IA4SI website (<http://www.ia4si.eu/toolkit/>), where users can find the description of the Toolkit, its objectives, functionalities as well as a video tutorial.

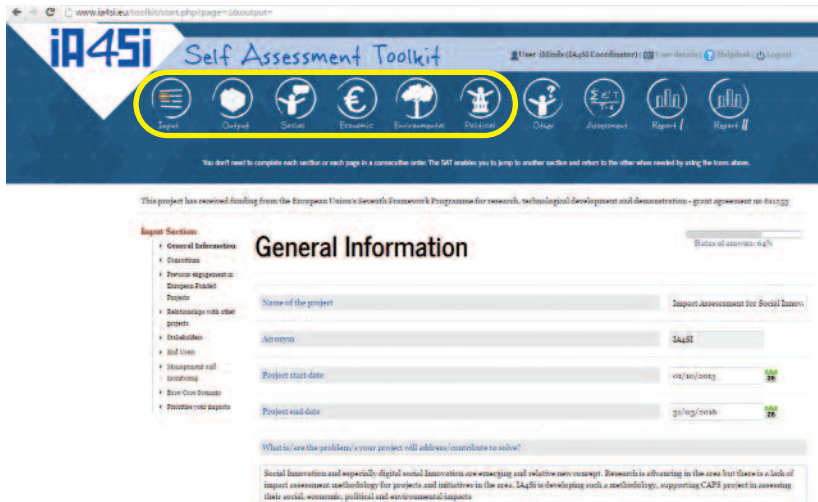


Fig. 22 – Menu

Following the methodology structure, the SAT assesses the impact by gathering the data along 6 sections:

- **Input:** This section is aimed at collecting general information about each project (such as Duration, Consortium composition, Collaborations with other projects, previous engagement in European projects, people employed, etc.) and identification of project's stakeholders and users.

- **Output:** gathers information about the project's technological input. The innovative solutions that are being developed, the tool, its main services and components.
- **Social:** this section aims to map the impact of the project on relevant users, on the online communities engaged in the platform and for the local communities potentially affected by the project. The impact on project partners and on people working in the project is also requested.
- **Economic:** the aim is to analyse the relevant economic impacts of the Outputs that CAPS projects develop along their lifetime. Three dimension are explored plus the feedback from users.
- **Environmental:** within each of the selected categories, project will assess two dimensions of environmental impacts: the ones produced by the projects themselves, and those produced by users of the projects (or, the projects' impacts on user environmental behaviour).
- **Political:** this section evaluates project and project user capability to influence policies, change existing institutions or create new institutions.

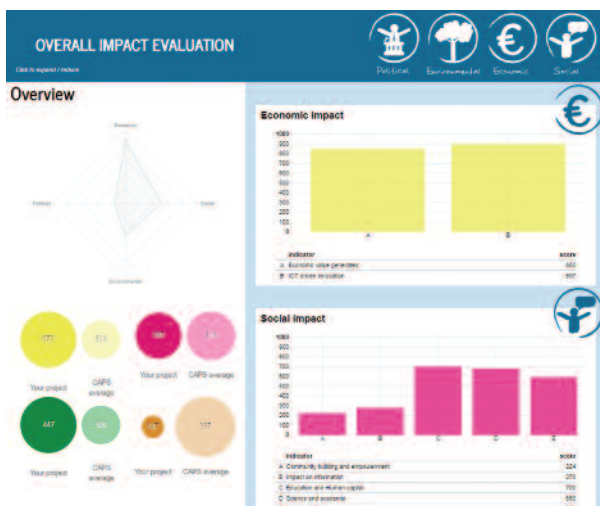


Fig. 23 – Report detail

At the end of the data entry for all sections, a project can run the assessment and visualise the report showing the results obtained. The data inserted by CAPS representatives is elaborated in real time by the SAT providing in a graphic, easy-to-understand way, the visualisation of impacts and the comparison of the performance with a set of benchmarks.

After the end of the IA4SI project, the Self-Assessment Toolkit will remain open at least for two years enabling the new generation CAPS projects to assess their impact¹².

User Data Gathering interface

The SAT collects and assess the information provided by project but it is important also to capture a counterfactual feedback based on the user perception about the service used. Through the Users Data Gathering Interface (<http://www.ia4si.eu/toolkit-users/welcome.php>) the IA4SI assessment system connects the impact declared and expected by projects with the perceived quality of services.

www.ia4si.eu/toolkit-users/welcome.php

ia4si User Data Gathering Interface

Welcome to the IA4SI User Data Gathering Interface!

Kindly answer the questions below about the Project you are/ have been participating in this answering exercise, attending where organized in the CAPS or testing and using the tools developed within the projects. Please note that not all sections might be relevant for the activities you joined, and we don't expect you to answer to all questions. The information you provide will be of great help to the CAPs projects that need to know the impact (Social, Economic, Environmental and Political) they are having on users. It's the last project, an evaluation within the CAPS process to collect the information and help them meet their targets. Your reply will remain anonymous and be analysed only at an aggregated level.

Thank you in advance for your time and support.

Information about the CAPs Project you are using

1. Project (Scenario/Service)

Information about you

Where are you from?

Fig. 24 – User Data Gathering Interface

¹² New projects that are willing to become IA4SI SAT users just have to obtain the credential by writing at info@ia4si.eu

4.2 Impact4you - Citizens Engagement Platform

The Impact4you platform is a dynamic online knowledge and collaboration Web-based tool supporting content production, thematic discussions and stimulating collaboration among the participants. The Impact4you platform is the main tool for engaging citizens in learning more about CAPS projects and social innovation initiatives, approaches and opportunities. Through the online platform EU citizens have the opportunity to express their opinion on CAPS outputs, discuss the services offered and their impact potentiality at the social level and social up-taking.

The screenshot shows the Impact4you website interface. At the top, there's a navigation bar with links like 'Home', 'Report CAPS Development', 'Contact', 'About', 'News', and 'Services'. The main header area has the Impact4you logo and a call to action: 'Fill in the survey, submit your answers & get an e-gift'. Below this is a large banner with the text 'WANT TO LEARN MORE ABOUT DIGITAL SOCIAL INNOVATION'. The main content area is titled 'Recent developments of the project and its economic impact' and features seven project cards, each with an icon and a 'Participate now' button. Below the cards is a 'Latest News' section with a list of news items and a 'Latest tweets' section. At the bottom, there is a footer with the Impact4you logo, contact information, and a feedback form.

Fig. 25 - Impact4you Home page <http://www.impact4you.eu/>

The platform implementation is accessible through the link <http://www.impact4you.eu>, connected to the main social networks (i.e. Twitter and Facebook) and it is available in two languages: English and Italian.

The Impact4you platform has been implemented based on the relevant user requirements and technical specifications defined in the context of the IA4SI project. To entice users to remain on the platform and explore its features, it is essential that the interface is as simple and intuitive as possible. Therefore, an appealing layout and graphics were chosen, as well as clear, short descriptions on how to proceed. The homepage, as shown in Fig. 25 explicitly presents what the platform is. By accessing the Impact4you platform citizens can be informed about the CAPS tools and offerings. A dedicated page is available for every CAPS project including basic information about the project (title, duration, social media presence etc.) as well as information about its goals, objectives, outputs and the benefits that users can gain from the usage of the available tools. Fig. 26 shows the Decarbonet's project page.



Fig. 26 – Example of project page <http://www.impact4you.eu/project-output/decarbonet>

Additionally, the citizen is requested to answer a number of questions which are available per project – user responses allow projects to further improve their offered services. Below the list of questions that are available for Decarbonet:

Share your opinion! Share your opinion!

The aim of this website is to give EU-citizens the opportunity to discuss and learn about digital social innovation projects as the one you just read about. Your opinion will be very useful for us and for the project that developed the service: it will allow us to further improve the service and this platform.

I am: *

- Currently using one of the services of the project described or participating in one of its activities
- Not a user/participant of the project services or activities, but a person who is actively involved in the topic/social challenge discussed ¹ -
 (I'm a volunteer in organisations working on the cause, I donate to this cause/topic, I participate to related events, etc.)
- Not a user of the project services or activities, but a person interested in the topic described and following it via different media
- Not a user of the project services or activities, but a person caring about the topic but not really following it via different media
- None of the above
- Other

I am from: * Select a value -

My age is: *

- Below 25
- 25-35
- 36-45
- 46-60
- over 60

Which is your highest school qualification? *

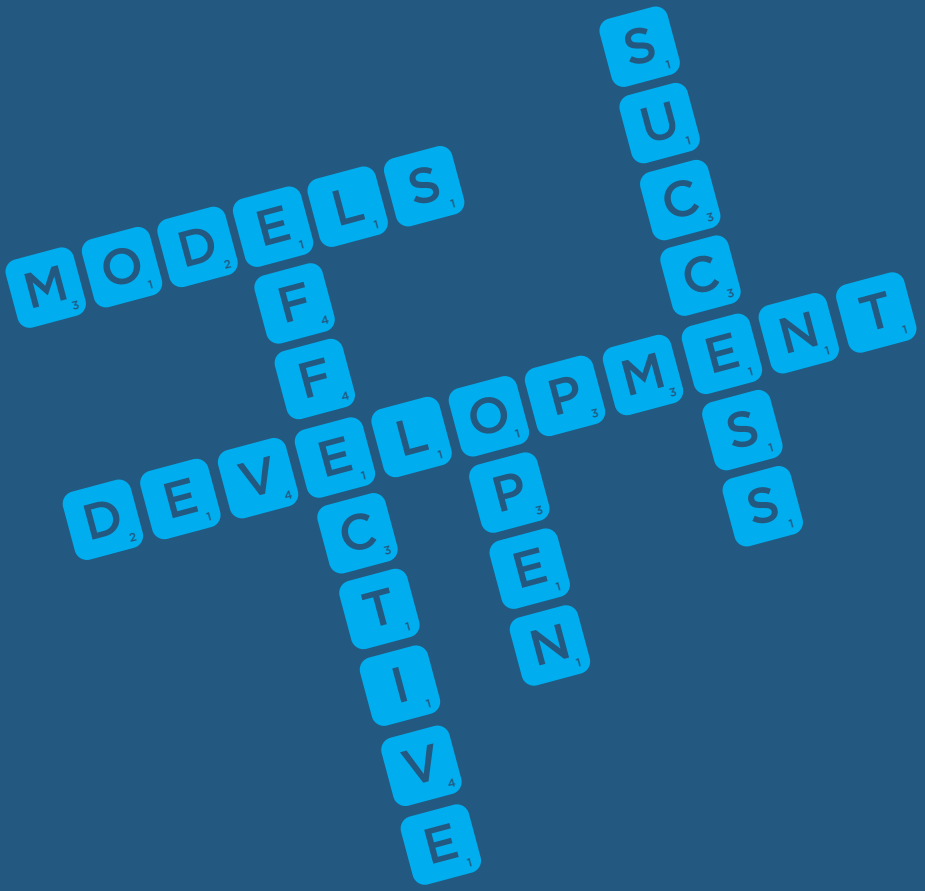
- No qualification
- Primary education
- Secondary education
- University bachelor's degree (3 years programmes)
- University master's degree (2 years programmes)
- Post-graduate degrees (Ph.D., specialisations, etc.)

What is your main occupation?

We will now ask you a few questions about the service described above.
Please read the following statements and indicate to what extent you agree or disagree.

Fig. 27 - Example of questions <http://www.impact4you.eu/project-output/decarbonet>

Moreover, a public space for debate is available where citizens can express and exchange views, ideas and opinions of general or special interest in CAPS projects or/and social innovation initiatives. The use of the Impact4you platform at citizen level enables them to know more about social innovation initiatives and contributes to the overall effort for the implementation of social innovation. On the other hand CAPS can use the platform in order to disseminate their services to the wider audience and “hear” what citizens say about their services.



SECTION

3

Lessons learned

How to improve DSI: best practices*

The significant amount of data gathered during the IA4SI project made it possible to trace a detailed picture of the CAPS (and by extension DSI) projects, including identifying their strengths and the most significant contribution they made to well defined and necessary societal dynamics. The projects, in fact, managed to identify strategies and tools that are more likely than others to produce significant and positive impacts. The identification of these practices is a key contribution for the understanding of the DSI domain and the development of future projects.

In this perspective, this chapter addresses the “best practices” concept not as single projects that obtained higher scores on punctual indicators. The term refers instead to the ensemble of activities and strategies that have allowed the CAPS projects to deliver significant results and effectively tackle relevant societal issues.

The practices described in the following chapters are examples of how the CAPS projects developed valuable and innovative solutions, positively supporting five main categories of societal engagement and obtaining good performances themselves. Such categories have emerged from the analysis of the data entered in the Self-Assessment Toolkit: the analysis highlighted areas (community building, information, ICT driven innovation) in which the project performances have been particularly successful and effective. It also identified different kinds of activities that shaped the most successful case histories.

Such activities have been organised into the five practices, practices that do not correspond to individual projects or to project scores, but are broader concepts under which the projects’ out-

* The authors of this chapter are Alessandra Prampolini (T6), Francesco Bellini (Eurokleis) and Wim Vanobberghen (iMinds)

standing results are presented.

This analysis does not rank the projects but it aims to answer the following question: in order to be successful, what did the CAPS project do, and how?

IA4SI has identified those practices (considering all the projects) that have been particularly capable of reaching a certain set of goals within their specific area of engagement. As mentioned above, this process brought to the definition of five main areas of engagement:

- contribution to making research framework programmes accessible to citizens, engaging them and developing their results through highly participatory practices;
- bridging different communities and supporting their networking activities;
- effective support for the emergence and the dissemination of social innovation ideas;
- development of large (and previously non existing) communities using different drivers to attract members and stakeholders;
- achievement of specific features such as sustainability and transferability for projects that managed to fully exploit their potentialities and their outputs.

With respect to these categories, some projects achieved outstanding quantitative results (DecarboNet on Community Building, SciCafe2.0 on Bridging Communities) whilst others addressed challenging tasks (CHEST and Web-COSI on Facilitating DSI) or others focused on innovation (D-CENT and IA4SI on Opening Up Research Frameworks). Some projects developed interesting and replicable models (CAPS2020 on Bridging Communities, CATALYST on transferability), while others still built their strategy around a strong topic (WIKIRATE on Building Communities and CAP4ACCESS on Opening Up Research Framework).

In every case, the categories here identified are key to any actor approaching the DSI domain and their understanding can significantly contribute to rapid progress in the knowledge of this field. For pro-

jects working on building communities, engaging with research tasks from the citizens' perspective and developing sustainable and transferable ICT tools, the examples below could constitute an effective guidance towards the achievement of their goals.

5.1 Bringing citizens into the picture

One of the first and most notable best practices that emerged from the analysis of the CAPS projects is their **capacity to develop tools, content and activities that are genuinely oriented to be citizen-friendly** and that make new instruments and knowledge accessible to citizens. This is not a frequent occurrence for European projects that are largely based on research and on scientific approaches. In fact, academic language is often difficult to translate for non-academic audiences and scientific results are often addressed to scientific communities only. On the contrary, and consistently with their "collective" nature, all CAPS planned the development of contents and channels that are intended to be spread among a wide number of citizens and communities from the very beginning (the number of project users, according to the self-assessment, is over 11.200).

CAPS projects reached this goal through the exploitation of different kind of ICT tools and through participatory approaches, specifically **targeting a number of communities and developing tailor made content**. Three practices emerged as particularly successful. They reflect clear goals and practices of specific projects that should be taken into account for future strategies in similar projects and, in general, as potential solutions to a more inclusive approach to research.

- **Engaging citizens in political participation (D-CENT)**: according to the project approach, citizen political participation is perceived not only as a purpose but also as a means for developing the research. The strict connection with communities and pilots managed to attract a high number of grassroots sta-

keholders (NGO, associations, activists and social movements, bloggers) and users (social movements and activists, software developers, citizens), fully involved in the development of the project's research outputs.

- **Encouraging citizens towards social inclusion (CAP4ACCESS):** in this case, the simplicity of the project's overall focus makes its tools very accessible to citizens and allows the project to develop and enhance them as real crowdsourced research outputs.
- **Engaging citizens in impact assessment (IA4SI):** in order to spread knowledge about CAPS and social innovation in general, the project involved in the evaluation of CAPS performances managed to create a direct communication channel between the citizens and the projects from a scientific perspective.

5.2 Bridging among different communities

A highly relevant achievement emerged from the data analysis regarding most of the CAPS projects: their **capacity to connect different communities and foster collaboration, developing common languages and activities**. Most of the projects, within their specific field of engagement, tried - and often successfully managed - to involve as many stakeholders as possible and in particular to bring together the academic world and the wider public, or to support the transfer of good practices from community to community, when they were facing similar challenges. This activity is very significant from a social point of view, as it means that **CAPS can actually impact on the networking dynamics of communities, projects and stakeholders**. Within the CAPS landscape, the analysis identified two main examples of projects that achieved very good results through different approaches:

- **Developing an easily replicable model (SciCafè2.0):** while bringing science closer to society and supporting scientific knowledge transfer to civil society organizations, the project managed to develop and apply a highly flexible approach,

adaptable to very different purposes and situations, regardless of physical boundaries, topics or audience homogeneity. As a result, this model can easily be deployed by means of open access tools that are nowadays accessible to all citizens who have basic ICT literacy.

- **Developing a model for networking activities (CAPS2020):** this support action based its relationships with CAPS and other actors developing a collective intelligence model on progressive steps. It was able to go beyond mere networking activities and actually develop a vision and knowledge about the scenario in which it moved. Moreover, it managed during this time to attract a big variety of actors in a durable way, since the involvement did not stop at simple participation to events or workshops, but attendees perceived a tangible opportunity to really contribute to the overall debate.

5.3 Promoting Digital Social Innovation

One of the CAPS most relevant objectives was to support the dissemination and implementation of digital social innovation ideas. Most of the CAPS projects developed online platforms and social networks that are not only the main output of the project but actual instruments for dissemination and exploitation of their results. In some cases the project activities were specifically focused on **supporting the emergence and development of innovative ideas and practices in the field of Digital Social Innovation**. In this respect, three approaches have been particularly successful:

- **Seed funding (CHEST):** in this case the project was focused on implementing a primary funding mechanism to achieve DSI emergence through the provision of seed finance by mean of open funding calls, the creation of a community of key stakeholder groups coming from within Europe's Digital Social Innovation community and the development of a dedicated Community Platform.

- **Open calls for collaboration** (CATALYST): the activities developed by the project aimed at gathering community partners interested in evaluating and testing collective intelligence tools, processes and methodologies developed through project activities among their own communities. This approach produced very positive results in relation to the improvement of processes and organisational innovation. CATALYST also generates high impacts in terms of efficiency of pre-existing technologies.
- **Contest for data visualisation** (Web-COSI): one of the project tools, Wikiprogress, ran an info graphic and data visualization contest. The prize for the top 3 winning entries was a paid trip to Guadalajara, Mexico, where they could attend the 5th OECD World Forum on 13-15 October 2015. The competition was open to all individuals, both amateurs and professionals, and was highly successful in terms of participation and resource mobilisation.

5.4 Building communities

This area of engagement is to some extent complementary to the idea of “bridging among different communities” and pushes it one step further: It is not just about creating a link amongst the actors, but to really bring them to see themselves as a group. A good number of CAPS managed to demonstrate that it is possible **to actually gather a significant number and variety of citizens and communities around a process or an idea**. This is a critical achievement as attracting users and “transforming” them into a community that recognises itself as such is one of the biggest challenges for this kind of. After assessing CAPS results, IA4SI identified three main successful strategies for creating large communities.

- **Involving big multipliers** (DecarboNet): this project managed in a relatively short time to obtain the attention and participation of an outstandingly wide audience through the presence within its consortium of a leading international organisation which provided by default a rich network of contacts and fol-

lowers, contributing to enhance the community building capacity of the project. Similarly, it built its main collaborations outside the social innovation domain with big institutional actors able to reach international audiences and to easily get under the spotlight. In conclusion, the project managed to build its community by gathering big players with sound reputations and networks of members, followers or partners around a clear objective.

- **Building on strong links with local communities (D-CENT):** as anticipated, in this case the project built its activities in collaboration with local and grassroots organizations from the very beginning. Apart from allowing the project to effectively involve these communities in research activities (ch.1), this also strongly enhanced its networking capacity through the communities' existing networks. This also meant collaborating with other actors eager to exchange experiences, models and tools. This fostered a sense of being part of a large, dispersed and multicultural community with a common goal: to tackle the mainstream democratic processes.
- **Gathering a community around a compelling issue (WIKI-RATE):** the attracting factor in this case is the topic in itself, revolving around big companies performances and impacts. This is a highly relevant issue, which is easily understandable and close to everyone's life and needs. Moreover, tackling an activity (buying) that is part of everyone's daily life, contribution to the platform could potentially be within anyone's reach. The choice of a topic that has these characteristics implies a great potential for community building.

5.5 Sustainability, Exploitation and Transferability

It has been of particular interest for IA4SI to understand whether the impacts produced by projects are going to last over time and how long they will continue to deliver benefits to the project bene-

ficiaries and/or other stakeholders after the EU's financial support has expired. In order for this to happen, CAPS projects needed to identify exploitable products, exploitation strategies and business models from the beginning. Some CAPS showed a significant **capacity to deliver durable, transferable and fully exploitable outcomes**. The paragraphs below describe the main features that allowed the projects to achieve those results.

- **Economic Impact** (D-CENT): The project developed highly significant work on complementary currency systems and crypto currency that led to two very well received research publications and the development of Freecoin, a novel blockchain based complementary currency toolkit. This work tackles in particular social exclusion and communities that have economic difficulties due to austerity and public services cuts and can be rightly considered as a significant result obtained in the field of citizens' economic empowerment. The project provides a substantial contribution to ICT driven innovation and all the results of the project are made available as open source.
- **Sustainability** (CHEST, CATALYST): the CHEST project represents an interesting case mainly because it is the only project that highly contributes to fund other ideas within the Digital Social Innovation context and actively support them in developing sustainability plans in the medium and long term. Moreover, the project reduces its users' need to access emergency finance and it supports the creation of entrepreneurial initiatives. Finally, CHEST also helps its users to diversify income resources and increase their resilience to cope with a crisis. On the other hand, CATALYST has created a business plan for some of its tools and the participation of the project partners to CATALYST determined new market opportunities for the SMEs involved in the consortium.
- **Transferability** (DecarboNet, IA4SI, CATALYST): thanks to the wide networking system previously described, DecarboNet managed to implement an impressive number of dissemination activities and to reach many and varied audiences. In particular, it strongly supported the knowledge transfer between universi-

ties/research centres and the social innovation domain. IA4SI achieved a similar result through the Impact4you platform, which is a good channel for bringing research project outputs to social innovation actors and vice-versa. Finally, CATALYST supports knowledge transfer between universities, research centres and the social innovation domain, as social innovators or incubators for social innovators can use tools to gather ideas, build structured discussions and analyse the attitudes and trends of a community.

At a glance: CAPS best practices

- Reaching out to citizens through a grassroots approach and simple messages is a significant achievement for projects that are meant to increase knowledge and opportunities across Europe.
- The first generation of CAPS projects strongly aimed at creating links among different types of actors, with a particular focus on closing the gap between the scientific community and the public at large. DSI represents an appropriate channel to succeed in this respect, easily replicable and fit to create and maintain links amongst different actors.
- Considering the differences in the spread and diffusion of innovations between the social and market economies, a social innovation tends to be diffused through a more complex flow-like process of interaction and modification, through the role of citizens/innovators and the progressive involvement of communities.
- Building a community oriented towards a common goal is the final step that can make a great deal of difference while addressing relevant social challenges. The experience of CAPS demonstrated that this is possible.
- The actions to be implemented from projects active in the field of Digital Social Innovation in order to be reasonably sustainable should follow a business model, develop efficient participation, and promote gathering opportunities.

How to foster uptake of DSI in Europe: recommendations*

The activities illustrated in the previous chapters – the study of the CAPS and of the Digital Social Innovation domain, the development of the impact assessment methodology and its dissemination, the analysis of the assessment results – allowed the CAPS team to build an in-depth working knowledge of this domain and its performances, outputs, outcomes and impacts.

In the light of the main observations that have emerged from the CAPS impact assessment results, it has been possible to develop recommendations aimed at preventing the emergence of major constraints identified by IA4SI while analysing the data provided by the projects. These constraints are mainly concerned with the appropriate valorisation of the projects' most relevant leverage: thematic communities and their needs; the development of a business plan oriented to guaranteeing the projects' economic sustainability beyond the funding period as well as pursuing channels that are consistent with their goals and values; the importance of keeping a constant focus on user engagement and preferences; and finally, the need to stimulate and reinforce project efforts towards assessment tasks, thanks to appropriate planning.

The two paragraphs below will illustrate the following contents:

- 6.1 presents opportunities and risks concerning the DSI domain and the CAPS in particular, developing consistent policy recommendations for future projects;
- 6.2 highlights some areas of investigation, which can be crucial for the full understanding and effectiveness of future activities.

* The authors of this chapter are Andrea Nicolai (T6), Alessandra Prampolini (T6) and Shenja van der Graaf (iMinds)

6.1 Opportunities and constraints: policy recommendations

The activities analysed by IA4SI involving projects, users and citizens confirmed that DSI processes revolve, first of all, around the needs of thematic communities of citizens. Citizen and user involvement (especially the latter) proved to be the most challenging task to fulfil and it was also a significant source of experience for policy recommendations and of inspiration for further investigation in this field of research. This means that on one hand the projects' ability to involve interested citizens is a key factor for the effective development of the tools whilst, on the other hand, the pre-existing characteristics of such communities and often of local environments are equally relevant for the kind of activity to be implemented. In this perspective, CAPS projects positively reflect the diversity of communities active within the European Union and represent an opportunity to explore how to adapt social innovation practices from one context to another, with the support of ICT technologies.

At the same time, the actual capacity of these projects to expand user communities is hindered by factors such as the digital divide and the fragmentation of local dynamics and regulations. The assessment, however, highlighted a limited attention towards these barriers, and no attention at all towards the digital divide issue. Moreover, the sustainability of most of the platforms beyond the EU funding period is yet to be determined and currently not guaranteed. Finally, the projects need to be encouraged to pursue overall assessment and evaluation tasks in a regular and planned way, in order to guarantee an appropriate data gathering and reporting process.

The recommendations below reflect the constraints that emerged from the IA4SI experience, with the aim of preventing them and easing the implementation of future CAPS and DSI projects in general. They deal with four macro-areas of engagement: 1. the pro-

jects' role at a local societal level and the valorisation of grassroots communities; 2. the projects' financial sustainability; 3. user involvement; 4. the assessment role and planning.

- 1 In the light of the central role played by grassroots participation for an effective implementation of a collective awareness platform:
 - a) CAPS projects should be encouraged to avoid technological determinism, since the tools they develop are not the final purpose of their activities. On the contrary, the focus should remain on the needs of the target communities, which have to be clearly identified from the very beginning. In addition to this, the technology needed to support the activities should be defined. The projects generally managed to keep the balance and maintain the centrality of the targeted communities and, for the future, this effort should be more explicitly required and supported.
 - b) More emphasis could be given to process or organisational innovation in the future. In fact, while some projects have an impact on product innovation, the assessment process clearly highlighted that they are most effective when addressing and producing changes in societal dynamics, working processes, relationships between actors. CAPS should be able to appropriately value these types of generated impacts.
 - c) In order to support the dissemination of good practices and new models proposed by the CAPS community, it is desirable that the EU proceeds towards the harmonisation of legislations that regulate topics such as data management and services and products markets.
- 2 Two main recommendations emerged from IA4SI observations to address the issue of financial sustainability:
 - a) Consistently with the point above, CAPS projects should be encouraged to put more attention on drafting business plans and on developing clear trajectories for their activi-

ties from a business point of view as well. This includes: clearly identifying new market opportunities for partners, increasing the number of business collaborations, creating new businesses through the project outputs, valuing their research results and stimulating the creation of new services.

- b) Access to alternative financial channels should be encouraged and facilitated. Crowdfunding, equity funds, impact investing are new and appropriate solutions for projects such as CAPS. Awareness about these channels, which are looking for new areas of engagement, should be raised and their identification should be strongly supported, possibly even implementing a specific support action for this task.
- 3 Some relevant recommendations also emerged with regards to the role and the involvement of users:
 - a) CAPS case histories proved that, for a successful involvement of users, transparent data management rules and practices should be encouraged, and tools for direct control of the privacy and data should be provided to users. In fact, the assessment showed how while highly supportive of information accessibility and dissemination, users appreciated the many projects taking into account privacy preservation and transparency.
 - b) Regardless of the project topic, citizen engagement is one of the most challenging activities for CAPS and for digital social innovation in general. In this regard, the most successful projects were those that built their entire strategy around this task. Future projects should be encouraged to clearly plan channels to involve and activate a community and to identify concrete goals in this perspective.
 - 4 Evaluation tasks and impact assessment should be mandatory in all CAPS projects - and in the Digital Social Innovation domain as a whole - as they support projects and users

full comprehension and exploitation of the project outputs and impacts. Therefore, IA4SI recommendation for the EC is to:

- a) define a minimum set of impact assessment indicators (already in the calls) for which all the projects should gather data at regular intervals during their activities;
- b) require from the project to explicitly define a budget for impact assessment activities and, more generally, for collaboration activities with the support actions.

6.2 Next challenges: open issues

The reflections on the impact assessment process and results also highlighted relevant open issues worth further investigating. These issues emerged directly from the same constraints that generated the policy recommendations, and are therefore complementary to the previous paragraph. Moreover, the scope of these issues goes beyond the CAPS domain and aims to look at the entire DSI field. IA4SI identified three main areas of investigation, each of them articulated as follows:

- 1 Economic sustainability: dedicated and specific research should deal with the constraints and opportunities relating to the partially unresolved topic of projects sustainability beyond EU funding. In particular:
 - a) What are the characteristics that make some DSI projects more sustainable than other DSI projects? How can they be spread across European countries?
 - b) Which, among the new financial and sustainable models emerging in recent years, are most suitable for DSI projects?
 - c) How much does economic sustainability impact on the transferability and replicability of DSI models?

- 2 Project users: project user behaviours and preferences are key for a successful implementation and dissemination of practices and services proposed by CAPS, yet user themselves are often difficult to clearly identify and analyse:
 - a) Who are DSI users? What are their profiles and what makes them suitable targets for the projects? How diverse or homogeneous are they?
 - b) How can user communities be expanded and, in particular, how can DSI projects overcome the digital divide and engage groups at risk of social exclusion, a factor that still represents one of the main constraints for projects like CAPS?
 - c) In the light of the divides mentioned above, in order to be really inclusive and to tackle the society as a whole, which technologies should be preferred? Which engagement models?
 - d) How does engagement lead to potential behavioural change? Which kinds of models are needed? Are there social limits to adaptation?
- 3 Local context: EU citizens involved in DSI see it as an effective channel to take advantage of services otherwise not provided or to participate to public life in their countries/regions (i.e. eGovernance is one of field of application where DSI is proving to have the higher potential):
 - a) How strong is the link with the local context and the development of DSI or the implementation of emerging practices of DSI? To what extent is the same model transferable from context to context? Can we talk of DSI in general or are we already able to observe substantial differences in different EU countries in the way DSI is understood, supported and implemented?
 - b) Even in presence of similar needs, are some models implementable only in context where local communities are to some extent ready to fully exploit the opportunities offered by DSI? What does “ready” mean?

- c) How can we strengthen evidence-based knowledge of various social innovations in policy-making and reforms, including legislation? How can we strengthen social innovations for sustainable development?

At a glance: Policy Recommendations and Open Issues

CAPS projects offered a privileged insight into understanding opportunities and constraints in Digital Social Innovation identifying four main areas of engagement:

- 1 The central role of the communities to which such projects are addressed, which should be valued and further investigated;
- 2 The need to strengthen the projects' financial sustainability when EU funding has ended, as well as exploring innovative financial channels;
- 3 The attention towards user characteristics, preferences and involvement, which require more in depth analysis;
- 4 The importance of the evaluation and impact assessment tasks for projects.

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Links

Collective Awareness Platforms for Sustainability and social Innovation - Euroeapn commission page <https://ec.europa.eu/digital-agenda/en/collective-awareness-platforms-sustainability-and-social-innovation>

Digital Social Innovation project www.digitalsocial.eu

ERINA+ project <http://www.erinaplus.eu/>

International Association for Impact Assessment: http://www.iaia.org/publicdocuments/special-publications/What%20is%20IA_web.pdf

MAXICULTURE project www.maxiculture.eu

NominetTrust <http://www.socialtech.org.uk/>

OECD: <http://stats.oecd.org/glossary/detail.asp?ID=6575>

Summary of SEQUOIA project and deliverables: <http://www.lse.ac.uk/media@lse/Who-sWho/AcademicStaff/PaoloDini.aspx>

Glossary

Acronym	Definition
CAPS	Collective Awareness Platforms for Sustainability and Social Innovation
CBA	Cost-Benefit Analysis
DSI	Digital Social Innovation
EC	European Commission
EU	European Union
GDP	Gross Domestic Product
GHG	Greenhouse Gases Protocol
ICT	Information Communication Technology
JRC	Joint Research Centre
MCA	Multi-Criteria Analysis
ROI	Return of Investment
SAT	Self-Assessment Toolkit
SI	Social Innovation
SME	Small and Medium Enterprise
SNA	Social Network Analysis
SROI	Social Return of Investment
UDGI	User Data Gathering Interface
WEEE	Waste Electrical and Electronic Equipment

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Editors

EXPLORING IMPACTS OF COLLECTIVE AWARENESS PLATFORMS FOR SUSTAINABILITY AND SOCIAL INNOVATION

The book describes the Collective Awareness Platform for Sustainability and Social Innovation domain (CAPS) by using an “inside” perspective, as it is based on the research work of a project entitled IA4SI – Impact Assessment for Social Innovation.

The book first defines Digital Social Innovation as the technological enabled version of Social Innovation and describes CAPS projects consequently. Then, it introduces the quali-quantitative framework developed by IASI for analysing the impact of CAPS projects and provides the results of the impact assessment exercise. Finally, best practices and policy recommendations are provided for the benefit of CAPS stakeholders.

www.IA4SI.eu

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