Promoting Social Justice through Information and Communication Technologies (ICTs) and Knowledge Sharing - Experiences from an Italian Province

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Abstract. In contemporary knowledge societies, interaction and knowledge sharing through virtual networks are increasingly common practices, for which Information and Communication Technologies (ICTs) play a central role. In this context, citizens' engagement with their surrounding communities is becoming more and more conditioned upon their skills and interest in using new technologies. Scholars refer to a third-level "digital divide", where people unable (or unwilling) to use ICTs strategically risk being left out (van Dijk, 2006). The ability to access new opportunities offered by ICTs has been further ascribed to the levels of social and cultural capital found in local communities (Selwyn, 2004). The present paper seeks to explore the potential links between the social justice and new opportunities for interaction offered by the ICT field in the case study area, namely the Autonomous Province of Trento in Italy. It does so from a social justice perspective, investigating how local actors relate to ICTs and knowledge sharing that could, in theory, facilitate their work and increase their social capital. The empirical findings indicate both potential and gaps in terms of the promises brought by new ICT solutions and the priorities found among actors working with social issues. The paper thus brings to light some important aspects of social capital and territorial dynamics, for which ICTs can be seen as both helpful and damaging.

Key Words: Knowledge Societies, Digital Divide, Social Justice.

1. Introduction: knowledge societies, knowledge sharing and the digital divide

Over the past decades, knowledge has come to play a central role in most human activities, evolving as a key parameter defining post-industrial “knowledge societies”, and providing the new raw material of production in so-called “knowledge-based economies”. The role of Information and Communication Technologies (ICTs) [1] in knowledge management processes has further gained rapidly increasing importance, and may be seen as largely shaping the new governance structures of the Information Age (Castells, 2010; UNESCO, 2005; Rooney et al., 2005). These developments have been observed in for example Manuel Castells’ Rise of the Network Society , which describes how networks have come to constitute the “social morphology” of contemporary societies, as accelerated by the development of new ICTs (Castells, 2010). In light of these transformations, a distinction is sometimes made between knowledge societies and information societies, where information societies are taken to reflect societies driven by technological breakthrough, whereas knowledge societies place humans in the centre of attention (Burch, 2005; UNESCO, 2005). For example, seeing the technological determinism sometimes reflected in the information society notion as “inadmissible”, UNESCO’s vision for creating knowledge societies depicts societies where “all forms of knowledge, taken in their plurality” are represented (UNESCO, 2005, p. 27). While new technologies and scientific progress may indeed influence the development of knowledge societies, this should not overshadow the fact that these are to be seen as tools, not determinants, for shaping “knowledge societies for peace and sustainable development” (UNESCO, 2013).

Nevertheless, although new ICTs, including the widespread use of Internet, in theory could broaden people’s access to knowledge, there are signs of inequalities arising, or indeed existing disparities widening, in the context of increasingly digitalised knowledge societies. One aspect of this is the restricted access to knowledge experienced by many individuals and communities worldwide, especially, but not exclusively, among those with fewer resources available for acquiring it (UNESCO, 2005). In an era when “access to flows of information and knowledge has become a vital condition for the capacity to act in modern world society”, people, and even whole communities, thus risk to be excluded (Verschraegen and Schiltz, 2007, p. 157). This is a

particularly worrying issue, not the least considering that the availability of information and knowledge are thought to forward democratic ideals. Sunstein (2001, p. 90), for instance, suggests that the availability of information in a democracy “increases the likelihood that government will actually be serving people’s interests”, while Willinsky (2002, p. 5) asserts that extended access to scientific research may be seen as a way of exploring “democratic possibilities of deliberation, justice, or equality” within and between societies. The importance of promoting knowledge sharing is thus arguably an undeniable facet in the pursuit of more socially just knowledge societies.

That the potential of technological advances and new ICTs to facilitate knowledge sharing and participation in knowledge societies does not always materialise can be witnessed in what is commonly referred to in the literature as the “digital divide” (see e.g. van Dijk, 2006; Hilbert, 2011). This term, although it remains vaguely defined, broadly refers to inequalities witnessed between both individuals and geographic areas in regards to access and use of ICTs. Over time, the phenomenon has evolved from mainly concentrating on physical access to modern technologies, to later bring light to people’s different ability and skills to use ICTs (van Dijk, 2006). Describing access to ICTs in progressive steps, van Dijk (2006) outlines how material access is, or ought to be, followed by skills and usage access, where operational skills ideally lead the development of strategic skills needed to fully participate in society. The fact that many people still lack such “strategic access” contributes to creating a third-level digital divide, involving the risk of “less participation in the most relevant fields of society (economy, politics, culture, spatial mobility, social institutions, social networks and communities)” (Ibid., p. 226). This third-level digital divide is closely related to what Gurstein terms “effective use” of ICTs, referring to “the capacity and opportunity to successfully integrate ICTs into the accomplishment of self- or collaboratively identified goals” (Gurstein, 2003). As he sees it, this requires a range of elements: from physical access to Internet connection to a favourable surrounding policy environment allowing people to develop skills for “effective use”. That physical access to ICTs may not automatically lead to “effective use” is further highlighted by Natreillo (2001, p. 3), who describes the controversy around efforts to bridge the “first” digital divide (physical access) may worsen disparities in computer and Internet use, unless it is accompanied by adequate educational efforts to promote “creative and educationally stimulating activities”. In the opposite case, physical access might trigger more time spent on computer games, potentially displacing other activities due to the “reallocation of scarce resources to purchase technology” in less affluent families (
Ibidem
.). DiMaggio et al. (2004, pp. 379-380) similarly point out that early prophets who foresaw the potential of Internet to empower citizens, increase social capital and enhance equality “did not have in mind” gambling and pornography sites. It follows from the above discussion that addressing the digital divide requires both holistic and innovative approaches to overcome

digital inequalities - a challenge towards which the next section turns.

2. ICTs and Social Justice

In the continuous evolution of knowledge societies, where access to new technology has been described as the “the civil rights challenge” of the new millennium (Kennard, 2000, cited in Kuilema, 2012, p. 302), and great efforts are made to put many public services and make governments accountable online (Yildiz, 2007), digital divide(s) leaving some people behind contemporary developments becomes a both politically and socially worrying issue that needs careful attention. Some suggested approaches to overcoming the barriers created by the multifaceted digital divide will explored in this section. First, however, the links between the digital divide and social justice will be dealt with.

2.1. Bridging the digital divide

The moral rationale for dealing with the digital divide can be interpreted from a social justice perspective framed around Amartya Sen’s (1999) “capability approach”, where information and computer literacy is taken to constitute a “key capability for development” in the context of knowledge societies (Powell et al., 2012, p.11). Access to both knowledge and technology has further been described as Rawlsian “primary goods” necessary for having fair societies (Selwyn, 2004). Moreover, people need to be provided with adequate “social opportunities” (using Sen’s words) to develop both skills and understanding of how to best make use of the increasing flows of information and knowledge enabled through ICTs to exercise “substantive freedoms” like liberty of political participation (Sen, 1999, p. 74). Read in this sense, overcoming multiple digital divide problems that create barriers to people’s participation in knowledge societies is an integral part of promoting social justice. To this background, the present work sets out to explore how knowledge sharing, involving people who may not be naturally inclined to engage with new technologies, can help to overcome the multifaceted digital divide, enhance social

inclusion and create more socially just knowledge societies.

In the literature, different ideas exist as for how to address these far-ranging issues. While some authors believe that the digital divide will close naturally over time (Compaine, 2001), others hold that there is nothing “new” about the divide - it rather reflects existing structural disadvantage where “those who are already excluded will also have fewer opportunities to access and use computers and the Internet in the first place”, which thus points to the need for more profound social change beyond that offered by technological skills (Verschraegen and Schiltz, 2007, p. 169). Yet others see the necessity of targeted efforts, for example through local leadership and strategic interventions to promote people’s “effective use” of ICTs (Gurstein, 2011), and/or a strengthened role of education to address digital inequalities (Natriello, 2006; Norris et al., 2003; UNESCO, 2005). Exploring the role of advocacy, Kuilema (2013, p. 291) investigates the potential role of social workers to forward the interests of disadvantaged groups with whom they work, and as such to be “at the forefront of efforts to decrease the digital divide”. In a similar vein, Natriello (2006, p. 6) suggests sociologists of education as suitable for the task of addressing disparities in computer and Internet use, by using their expertise and tools of analysis to “ensure that social barriers in new digital environments do not operate as effectively to limit knowledge sharing as have traditional physical barriers”.

From a community perspective, Selwyn (2004) suggests that in order for people to make relevant use of technology, they must have access to “embodied” cultural capital (in the form of adequate knowledge) “either in person or in proxy” (Selwyn, 2004, p. 54). To provide such proxy, Williams et al. (2005) point to the importance of “appropriation intermediaries” and social learning to help to form communities of practice where the relevant use of new technologies can be achieved. According to Gursetin (2011, p. 4), this may require direct intervention to “ensure that elements currently absent in the local technology and social ecosystems are in fact made available”. To understand from these accounts, what might be needed in order to spread the benefits of new ICTs more evenly in society is to bring people with technological know-how together with individuals who may not be naturally able (or willing) to keep pace with technological progress. Alternatively, or in addition, the digital divide may be addressed by preparing people who work with vulnerable groups to provide these latter with access (in a holistic sense) “in proxy”. Practical suggestions as for how synergies can be shaped between

actors from technological and other fields and thus provide a meeting point for ICTs and socially oriented issues can be found in areas like social innovation, community informatics, participatory design, and more recently in the Free and Open Source Software movement applied to development practice. The discussion now turns to exploring propositions found in these fields.

2.2. Innovative ways forward

Broadly speaking, social innovation refers to the creation of new products or services that meet social needs and “provide solutions for individual and community problems” (OECD, 2010, p. 196). It further involves the creation of new social relationships and collaborations thought to “enhance society’s capacity to act” (BEPA, 2011, p. 9). In practical terms, approaches to social innovation in relation to ICTs can be found in for example community informatics and participatory design, where the importance of involving end-users in the design and development of new products or services is stressed. It is believed that by involving all stakeholders in the entire process; from identifying needs to implementing new products of services, participatory design help to develop innovations that truly reflect and meet local needs (Carroll and Rosson, 2007). Moreover, by allowing “local ownership” of innovations, these are allowed to evolve and adapt to changing local circumstances (Gurstein, 2003). From a moral standpoint, it is further held that “people whose activity and experiences will ultimately be affected most by a design outcome ought to have a substantive say in what the outcome is” (Carroll and Rosson, 2007, p. 243). In community informatics, referring to “the design and management of information systems and infrastructures for and by civic and municipal-level entities”, the bottom-up logic of participatory design can be thought of as forwarding democratic ideas, reflecting a reallocation of power, and promoting horizontal rather than hierarchical organisational structures (
Ibid
., p. 246).

An example of such horizontal collaboration that has gained increasing attention in development fields recently is the Free and Open Source Software (F/OSS) movement, whose activists are observed to break “silos” of both thinking and acting, and share problems and solutions to find innovative ways to approach complex problems (Chalmers, 2012). Consequently, it has been

claimed that social- and community organisations engaging in open source collaboration make them better equipped to “develop new innovations ways to address the root causes of social problems” (Ibid., p. 28). In a similar vein, UNESCO refers to this movement as “a model of social relations based on collective cooperation […] to whose promotion UNESCO is particularly attached” (UNESCO, 2005, p. 51). Open Source Software are further seen as offering both highly participative and relatively inexpensive opportunities for data collection and management, like for example using crowdsourcing, and are thus considered to be important tools for local communities’ mobilisation and self-organisation purposes (Berdou, 2012).

The intention behind introducing social innovation and related concepts here was to highlight approaches where actors from diverse fields are brought together to develop innovative solutions to overcome complex problems. More specifically, by showing how such broad-based collaboration between technological and social fields can be seen as ways of narrowing the multifaceted digital divide, the above processes arguably demonstrate how knowledge sharing and ICTs can serve to enhance social inclusion, and promote more socially just knowledge societies in general. To explore how these ideas play out in real settings, the next section describes some of the findings from the empirical part of this study.

3. Insights from the Autonomous Province of Trento

The empirical case study draws on a broad range of data collected in the Autonomous Province of Trento [2] (hereafter referred to as the PAT derived from its Italian name: Provincia Autonomia di Trento
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of January and 27
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of June 2013, using techniques like focus groups, semi-structured interviews, observations, e-mail surveys and informal conversations, as well as information from secondary sources like websites, policy documents and other publications to form a well-rounded view of how local actors view knowledge sharing and ICTs as potentially enhancing social inclusion and justice in the case study area.

3.1. Research Approach and Limitations

Actors from social cooperatives, the public sector, and the ICT field in the Autonomous Province of Trento were asked how they viewed the relationship between society and technology in general, and the role of knowledge sharing and ICTs for social purposes in particular, including in their own work. A collaboration project between local ICT- and social cooperatives to develop an online platform for knowledge sharing was further closely observed as a genuine instance of social innovation. Social cooperatives were selected as the main target group to represent the “social side” of the query, since these can be seen as actors concerned with advocating the interests of disadvantaged groups in the territory, and are as such regarded as suitable organisations capable of providing access to ICTs “in proxy” (see Selwyn, 2004 above). Another obvious group of actors included were people from the relatively advanced ICT research community found in the area - a sector further substantially backed by the Provincial government. For example, a consortium between the university and other local research institutions was set up in 2010 to specifically deal with the wider role of ICTs in society, from which many relevant insights were obtained. Finally, public officials from the PAT organisation itself were further consulted, both from departments dealing with social welfare issues, and staff from the specially assigned body in charge of promoting ICTs and innovation in the territory.

It proved to be relatively difficult to get people to participate in the study, partly (but not only) in light of the area of the research topic. Many of the actors from the social sphere tended to readdress my request for participation to somebody within the organisation deemed to more knowledgeable in the field of technology, before it was explained that the intention was not at all to obtain any technical information. A further obstacle was the generally quite cool interest towards participation in the study, which might be a result of both insufficient time among local actors to dedicate to such benevolent purposes, as well as the lack of any direct affiliation between the research and any institution belonging to the territory. Out of the forty e-mail

invitations sent out to social cooperatives to ask them to participate in focus groups, only three spontaneous answers were obtained, one of which declined the invitation and two proposing one-to-one meetings instead. Consequently, more targeted efforts had to be made with the help from some “key” actors, and although both focus groups and interviews could thus be organised, the research sample inevitably became less randomly selected. Most actors further expressed their wish to remain anonymous.

3.2.□□□□□ Case Study Findings

From the empirical data emerged that Trento appears to be a particularly well-suited place to promote processes of social innovation and broad-based participation in the development of ICTs. This observation is likely to be due to the fact that the province has a relatively advanced ICT community, in addition to a long tradition of cooperative activity in the territory, which reflects strong institutional capacity developed in both of these fields. In addition, its peculiar political situation and relatively small size (a total of around 500,000 inhabitants) create the conditions for strong presence and support of the public sector in most activities in the territory, as further enabled by a flexible and well-endowed fiscal revenue system on the local level.

Inspired by Dematteis and Governa’s (2005) methodological approach for identifying “System of Local Actors” (SLoTs), where local actors demonstrate the potential for “collective action” to forward shared development goals, a relatively dense system of actors and relevant projects could be identified that together appeared to promote shared goals of both knowledge sharing and active involvement of actors from across different activity domains in the development of ICTs. Within the identified system, some research groups acting as “appropriation intermediaries” could further be found, often with a mix of backgrounds and competences, and engaging in participatory design projects such as a “Laboratory of Technologies for Elderly” (for details see Parra et al., 2012).

On the other hand, the risk that the identified system could be seen as relatively closed emerged. In this regard, it was hinted to that social innovation in relation to ICTs might serve to reinforce existing networks in the province. In the peculiar settings of the PAT, with its strong presence of the public sector and many formally instituted bodies, some actors and organisations expressed to be outside the local “clique”, albeit sometimes for preferred reasons. In social capital terms, the interdisciplinary collaboration found between technological and social fields could thus be largely assumed to generate predominately bonding rather than bridging social capital, at least when understood in the context of the wider local community (Putnam, 2000). While these finding may thus put certain limits on the potential of existing initiatives to enhance social inclusion in the territory, in a more positive light they may lead to the diffusion and scaling-up of successful social innovations. For this task, Borzaga and Bodini (2010) have suggested that Italian social cooperatives are particularly well placed.

Some gaps were further felt in terms of the promises brought by new ICTs and the priorities found among actors working with social issues. For example, there seemed to be relatively little belief among actors form the social cooperatives that ICTs and knowledge sharing had much to offer in terms of improving their work with social inclusion in the area. Sometimes technology was even seen as a potential threat to such processes, as sensed in the express fear that exaggerated focus on the digitalisation of social services could harm the important human interactions involved in the work carried out by social cooperatives. Therefore, the idea of involving beneficiaries in the development of ICTs appeared to be rather far-fetched. These views sometimes stood in stark contrast to opinions expressed by people from the ICT community, who tended to be highly solutions-oriented, sometimes even with a rather technocratic view on the relationship between technology and society. For example, one prominent local ICT researcher claimed that people who do not follow the evolution of new technologies will eventually perform their work worse than others, and loose their competitive advantage. In special regard to social cooperatives, the same researcher strongly believed that to engage in social innovation and adopt new ICT-based solutions would positively contribute to their social capital, the latter of which he claimed is becoming an even more important value in an increasingly virtual world. For, him the digital divide was not seen as a major threat to this since “soon everybody will be very good at using technology” (Interview with the author, University of Trento, Department of Information Engineering and Computer Science, Povo, 9 April 2013).

Nevertheless, another perceived obstacle for social cooperatives to engage in social innovation in general, and to follow developments of ICTs in particular, was the lack of time repeatedly expressed among staff and volunteers within the organisations. Although it was frequently pointed out how new technologies have substantially facilitated many aspects of their work over the past 15 years, like communication via e-mails or finding important documents online, to take time to invest in understanding and developing new information systems was felt to be largely unrealistic in light of the already insufficient time to carry out “normal” services. Many of the consulted cooperative workers were further unaware about the possibilities offered by for example Free and Open Source Software in this regard.

Among more technologically oriented actors on the other hand, when asked about how knowledge sharing may help to forward social ends, one expressed view was that knowledge sharing is something that “is happening”, rather than something which can help. The important task, which however remains to be defined, is to find out what type knowledge sharing we allow to shape our future knowledge societies.

4. Discussion

In the emergence of knowledge societies, as underpinned by rapid technological advances and ICTs, both hopes and fears have been expressed about the potential of this societal form to represent the full diversity of knowledge, and to forward goals like social justice, peace and sustainable development (UNESCO, 2005; 2013). As things presently stand, however, the benefits of living in knowledge-intensive societies appear to be far from equally felt; nor do citizens evenly enjoy new opportunities offered by ICTs, as witnessed in multi-layered digital divide experienced both between individuals and entire communities. To address these issues, it is therefore crucial to understand what processes may help to shape more inclusive knowledge societies. This research has wished to contribute to that task by investigating how knowledge sharing, and more specifically using of ICTs, may help to enhance people’s participation in society “in proxy”, namely through enhanced collaboration and understanding between technological and social fields. Ideas emerging from fields like social innovation and

participatory design contribute to this, where actors from diverse sectors are brought together to tackle complex social issues.

The empirical findings of this study seem to indicate that real potential to enhance social inclusion through knowledge sharing and ICTs can be found in the case study territory, by virtue of the strong institutional capacities found in both ICT- or social spheres of activity in the area. This seems to stimulate collaborative efforts across these fields, as further substantially backed and supported by the Provincial government. Nevertheless, at the same time the findings seem to reflect a relatively closed system of actors working towards shared goals, rather than genuine willingness and capacity found among all actors in the locality to engage in social innovation processes. This arguably limits the potential for knowledge sharing to enhance social inclusion in the territory, since if some organisations are not part of the local system, neither are the individuals represented by these. On the other hand, it might be that existing projects and efforts inspire both organisations and individuals to learn from others' experiences and adopt already half-baked ideas that make them save both money and time invested in innovative projects (providing of course that the initial "social innovators" are ready to share their good practices). Therefore, to conclude: in light of the potential to scale up successful social innovations, the prospects of promoting more inclusive and socially just knowledge societies through knowledge sharing and ICTs seem to be anything but lost.

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References

Bepa, Empowering people, driving change - Social Innovation in the European Union, Bureau of European Policy Advisors, Publications Office of the European Union, Luxembourg, 2009.

Berdou, E., “Participatory technologies and participatory methodologies: ways forward for innovative thinking and practice”, IKM Working Paper No.17, Bonn, European Association of Development Research and Training (EADI)
, 2012, pp. 6-26.

Borzaga, C.; Bodini, R., “What to make of social innovation? Towards a framework for policy development”, Trento, Euricse Working Papers, N.036:12, 2012.

Burch, S., “The Information Society/The Knowledge Society”, in: Ambrosi, A.; Peugeot, V.; Pimienta, D. (eds.), Word Matters: Multicultural perspectives on Information Societies, C&F editions, 2005, [online].
Retrieved from: [
http://vecam.org/article517.html
on 20 March 2013].

Carroll, J. M., Rosson, M. B., “Participatory Design in Community Informatics”, Design Studies, Vol. 28, 2007, pp. 243-261.

Castells, M., The Rise of the Network Society, 2nd Edition with new Preface, West Sussex, John Wiley and Sons Ltd, 2010.

Chalmers, D., “Social Innovation: a Exploration of the Barriers faced by Innovating Organisations in he Social Economy”, Local Economy, Vol. 28(1), 2012, pp.17-34.

Compaine, B. M. (ed), The Digital Divide: Facing a Crisis Or Creating a Myth?, Cambridge (MA), Massachusetts Institute of Technology Press, 2001.

Dematteis , G., Governa, F., “Il territorio nello sviluppo locale: Il contributo del modello SLoT”, in: Dematteis and Goevrna, Territorialità, sviluppo locale, sostenibilità: il modello SLoT, Milan, Franco Angeli, 2005, pp. 15-39.

DiMaggio, P.; Hargittai, E.; Celeste, C.; Shafer, S., “Digital Inequality: from differentiated access to differentiated use”, in: Neckermann, K. M. (ed), Social Inequality, New York, Russell Sage Foundation, 2004, pp. 355-400.

Gurstein, M., “Effective use: a community informatics strategy beyond the digital divide”, First Monday
, Vol. 8(12), 2003, [online].
Retrieved from: [http://firstmonday.org/ojs/index.php/fm/article/view/1107/1027] on 20 May 2013.

Gurstein, M., “Open Data: empowering the empowered or effective data use for everyone?”, Fir st Monday

, Vol.16(2), 2011, [online].
Retrieved from: [http://firstmonday.org/ojs/index.php/fm/article/view/3316/2764] on 20 May 2013.

Hilbert, M., “The end justifies the definition: The manifold outlooks on the digital divide and their practical usefulness for policy-making”, Telecommunications Policy, Vol. 35(8), 2011, pp. 715-736.

Kuilema, J., “Social Workers and Broadband Advocacy: Social Justice and Information Communication Technologies”, Social Science Computer Review, Vol. 31(3), 2013, pp. 291-205.

Natriello, G., “Bridging the Second Digital Divide: What Can Sociologists of Education Contribute?”, New York, EdLab Teachers College, 2006, pp. 2-9.

Norris, D. M., J. Mason, Robson, R, Lefrere, P., Collier, G., “Revolution in Knowledge Sharing”, EDUCAUSE review
, September/October edition, 2003, pp. 14-26.
Retrieved from: [http://net.educause.edu/ir/library/pdf/erm0350.pdf] on 5 July 2013.

Oecd, “Chapter 5: Social Entrepreneurship and Social Innovation”, in: OECD, SMEs, entrepreneurship and Innovation
, Paris, OECD Publications, 2010, pp. 185-215.

Oecd, Local Job Creation: How Employment and Training Agencies Can Help The Labour Agency of the Autonomous Province of Trento – Italy, Paris, OECD LEED Publication, 2012.

Parra, C.; d’Andrea, V.; Giacomin, G., “Enabling Community Participation of Senior Citizens through Participatory Design and ICT”, Prato, CIRN 2012 Community Informatics Conference, 7-9 November, 2012, [online]. Retrieved from: [http://ccnr.infotech.monash.edu/assets/docs/prato2012docs/parra.pdf] on 15 July 2013.

Powell, M., Davies, T., Taylor, K.C., “ICT for or against development? An Introduction to the Ongoing Case of Web 3.0”, IKM Working Papers, Bonn, European Association of Development Research and Training (EADI), No. 16, 2012, pp. 4-34.

Putnam, R. D, Bowling Alone: The Collapse and Revival of American Community, Simon & Schuster, New York, 2000.

Rooney, D., Hearn, G., Ninan, A. (eds.), Handbook on The Knowledge Economy, Cheltenham, Edward Elgar publishing,
2005.

Selwyn, N., “Reconsidering political and popular understandings of the digital divide”, New Media & Society
, Vol.6(3), 2004, pp. 314-262.

Sen, A., Development as Freedom, Oxford, Oxford University Press, 1999.

Sunstein, C., Republic.com, Princeton, Princeton University Press, 2001.

Unesco, Towards Knowledge Societies, UNESCO World Report I, Paris, 2005.

Unesco, “Final Recommendations”, Paris 25-27 February, Unesco Report from the First WSIS+10 Review Event Towards Knowledge Societies for Peace and Sustainable Development, 2013a. Retrieved from: [http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/wsis/WSIS_10_Event/wsis10_recommendations_en.pdf
], on 10 June 2013.

Unesco, “Final Statement – Information and Knowledge for All: an expanded vision and

renewed commitment", Paris 25-27 February, Unesco Statement from the First WSIS+10 Review Event Towards Knowledge Societies for Peace and Sustainable Development, 2013b. Retrieved from: [http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/wsis/WSIS_10_Event/wsis10_final_statement_en.pdf] on 10 June 2013.

van Dijk, J., "Digital divide research, achievements and shortcomings", Poetics, Vol.34, 2006, pp. 221-235.

Verschraegen, G.; Schiltz, M., "Knowledge as a Global Public Good: the Role and Importance of Open Access", Societies Without Borders, Vol. 2(2), 2007, pp. 157-174.

Willinsky, J., "Education and Democracy: The Missing Link May Be Ours", Harvard Educational Review , 72(3), 2002, pp. 367-392.

Yildiz, M., "E-government research: reviewing the literature, limitations and ways forward", Government Information Quarterly , Vol. 24., 2007, pp. 646-665.

[1] The term ICTs is used in a broad sense here, including the Internet, wireless networks, cell phones, and other mediums (Definition from the Tech Terms Computer Dictionary: www.techterms.com/definition/ict).

[2] The Province of Trento is one of the only two provinces in Italy granted with this particular political status (for more contextualisation elements see OECD, 2012).