REAL CORP 2014

Manfred SCHRENK, Vasily V. POPOVICH, Peter ZEILE, Pietro ELISEI (Eds.)

PLAN IT SMART

CLEVER SOLUTIONS FOR SMART CITIES

PROCEEDINGS

of the 19th International Conference on Urban Planning, Regional Development and Information Society

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Clever Solutions for Smart Cities

Proceedings of

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Edited by

Manfred SCHRENK, Vasily V. POPOVICH, Peter ZEILE, Pietro ELISEI

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PREFACE

Manfred SCHRENK,

Conference Director,

Chairman CORP – Competence Center of Urban and Regional Planning

WELCOME to REAL CORP 2014, the 19th International Conference on Urban Planning, Regional Development, Information Society and Urban/Transport/Environmental Technologies!

"Smart Cities" has become a widely used term for the implementation of information and communication technologies (ICT) into the processes of cities and the built environment, aiming to improve the integration of the physical assets as well as social and environmental capital. Fired by several rankings there seems to be a competition for the title of the "Smartest City".

This kind of hype raises a lot of questions that REAL CORP 2014 will deal with. Can we plan it smart and find clever solutions for smart cities?

During the three conference days we will go deeply into the subject of smart cities and smartness and exchange our knowledge on current topics such as:

- What does "Smart City" mean in terms of quality of life?
- How does it influence the economic perspectives?
- Are the concepts of sustainability and resilience part of "Smart Cities"?
- What about politics and administration, policies and governance?
- How do "Smart Solutions" influence the "hardware" of a city, the urban fabric?
- Last but not least: what is the role of urban/spatial planning in and for "Smart Cities"?

Our conference takes place at a site with long historical background: People started to settle down in today's Vienna area from the Neolithic era, later the spot was used to erect the Roman fortress Vindobona. The history of Vienna dates some thousand years back, and in its history the city has faced lots of changes and challenges. For sure this is going to continue in the future as cities have always been places of change, innovation and competence. We are still facing the effects of economic crisis and we have to deal with environmental issues more than ever before; handling these challenges and still being able to improve our cities and find

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strategies to point out their extraordinary opportunities as centres of interest will confront us with many different views – but which of these views can be considered smart and why?

Therefore, it will be a pleasure to discuss with colleagues from all over the world how we can make use of today's tools and technologies to improve planning for our cities and for the people who live there to improve their quality of life.

REAL CORP 2014 in Vienna lets us compare and present different approaches to smartness including theory and practical examples from all continents – we are happy to welcome around 300 participants from over 50 countries worldwide. 140 presentations and more than 1,000 pages in the proceedings clearly show that there is plenty of room to discuss thoughts, make new contacts, develop new ideas and initiate upcoming projects.

Let me last but not least emphasize that the organisation of this year's conference took place under truly difficult conditions, so I really want to say thank you especially to Clemens Beyer and Christian Eizinger for their huge efforts in the preparation of this event.

Welcome to the Smart City Vienna!
Have a great conference!

Manfred SCHRENK, Christian EIZINGER, Clemens BEYER
and the REAL CORP Team

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which may not necessarily be consistent with the views and opinions of the editors.

Die Arbeiten geben die Erkenntnisse und Ansichten des jeweiligen Autors wieder
und müssen nicht mit den Ansichten der Herausgeber übereinstimmen.

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reviewed paper

Smart Cities between Ethics and Aesthetics

Chiara Garau, Luigi Mundula, Andrea Salustri

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1 ABSTRACT

Smart cities are systems of knowledge. If on the one hand they maintain an identity that prevents repetition - given the uniqueness of their historical-evolutionary path – on the other hand they can be classified according to the criteria of representation adopted for interaction with the urban reality. However, rather than adhering to a single paradigm (modernity, postmodernism or complexity), it may be useful to develop an "eclectic" perspective, in order to identify the conceptual intersections that show the existence of areas in which it is important to intervene, regardless of the diversity of paradigms.

In this context, researchers and practitioners can help in establishing a link between the development of collective identities and activities of public institutions interested in activating participatory decision-making processes. Thus, it is possible to appreciate geographical scales and elements of scarse interest at an institutional level, which, however, may prove to be of great value in citizens' individual background. Citizens become "daily life explorers" who can communicate with the institutions or share contents with them on the web. Instead, geographers and institutions have the task of integrating the individual opinions in order to produce "ethical frameworks" which are responsive to the living experience of people that animate everyday life.

On the basis of these premises, the aim of this work is to research an equitable and sustainable pattern of development, in the ambivalent tension between ethics and aesthetics of the urban contexts, "mediated" by the system of knowledge that characterises the smart cities.

2 INTRODUCTION

We all like to live in a more united, more intelligent and environmentally friendly world, making use of all that modern technology has to offer: school resources available remotely to students, health services more suited for retirees, safe cycle lanes for commuters and a fast broadband widely used for home workers. But in a time characterised by unprecedented pressures both on public finances and on urban landscapes, how can our cities reach such "intelligence" for their citizens? What should the partnerships between local authorities and the private sector consist in to work effectively, or in other words how do the institutions themselves need to become "smart" in order to make the city smarter for everyone? Can these changes be made in the short term with small incremental movements, or can they only be achieved through a long-term strategic vision? The answer to these questions is not unique as the concept of a "Smart City" contains many visions, often competing and variously articulated and codified internationally: sustainable mobility, nearly zero-energy buildings, smart living, green economy, e-health, e-participation, e-government, social innovation, public-private partnership and much more. Despite this uncertainty, the idea of the Smart City earns consensus on the political and industrial agenda and is poised to become one of the central issues around which planning efforts can be articulated and organized not only of the main Italian and European cities, but also of many other forms of territorial aggregation. This trend is already being enacted in a multitude of initiatives designed to transform millions of people's lives, from simple projects that improve digital access to public services (such as the use of smart phones to benefit of a wide range of goods and services), up to innovative infrastructure to recycle waste water or for heating. However, apart from being a set of technology solutions, the smart city is both the product of social needs on an urban scale, and the concrete manifestation of the need for a new generation of innovation policies regarding different levels of government. The basic idea is that the capacity of connection and processing of information offered by the ICT can contribute to building a much more cooperative model of community than in the past, and therefore more "clever", able to pursue efficient, i.e. more competitive and more inclusive, solutions. This idea, however, implies a radical change of often consolidated habits, and the removal of barriers between roles and responsibilities. The challenge is to combine urban environmental protection, energy efficiency and

economic sustainability in a single model, with the goal of improving the quality of life of residents and of creating new services for the citizens and for the city-users, at the same time reflecting the multiplicity of the needs of the population without imposing a general structure. It is important that cities are not smart in themselves but for the people who live in them. According to this smart approach, the relationship between the landscape, understood as the set of physical, social and cultural components of a given urban context, and the city users assumes particular importance. Considering this vision, the paper is organised as follows: in paragraph 2, starting from the difference between an ethic and an aesthetic approach to the city, we highlight the need of innovative forms of governance; in paragraph 3 the elements useful to implement a participated process at territorial level are discussed; finally in paragraph 4 the concluding remarks are presented.

3 IMPLEMENTATION OF SMART TRANSFORMATION POLICIES

The European Landscape Convention[1] states that every landscape should satisfy people's attitude to enjoying high quality landscapes and "to play an active part" in their development (Council of Europe, 2000). In doing so, landscape studies "contribute to the formation of local cultures", increasing "people's quality of life" (Council of Europe, 2000). On the other hand, landscape and cultural heritage (the "ethos" of a place) have often been considered in economic activities as important assets, that increase the added value of economic activities related to residential, cultural and recreational services. Therefore, it seems that the ethos of a place might depend both on what residents believe is ethic (their identity) and on what non-residents recognise as aesthetic during their stay (their perception).

In other words, the ethos of a place depends on concerns belonging both to internal and external perspectives. When an external perspective prevails, landscape reduces to an "icon" and people's quality of life might suffer significant decrements. On the other hand, when an internal perspective prevails, a place might develop a localistic attitude, that, even if it maintains citizens' quality of life, in the long run there is a significant loss in terms of welfare and well-being.

However, as it will be explained, activating participated processes at a territorial level is not straightforward, especially due to economic reasons related to the availability of human, financial and technological resources. Therefore, cooperation among local associations, territorial administrations and firms in endorsing government actions aimed at opening the decision-making and implementation processes to citizen's participation is of the utmost importance. In doing so, citizens might obtain an active role in territorial policies, and firms might obtain a higher added value for their goods and services (Salusti, 2013). Finally, local administrations might improve the level of welfare by contributing to the accumulation of social capital and by discovering additional cultural goods and practices in peripheral areas that are usually penalised in terms of visibility and accessibility.

In brief, a city that wants to be smart must be able to balance both an aesthetic and an ethical approach in order to make its landscape more attractive. In fact, the attractiveness of a landscape – with its territory, its habitat, and its cultural heritage – can contribute to an increase in its fruition. In this framework the quality of regulation plays a central role, regarding the right to have an active participation in the implementation of processes of landscape preservation, management and planning (Garau, et al., 2014). The complexity of the concept of smart - synonymous of sustainable, efficient, inclusive, technological - city must necessarily consider the dynamism produced by complex territorial geography, irreducible to the traditional political, administrative and hierarchical partition, in which the government at local, regional, sub-national levels needs to be integrated to the central or national one. This falls between the "living", "people" and "governance" factors that characterise the smart cities (Giffinger et al., 2007). They acquire a meaning only

[1] The European Landscape Convention aims to "promote landscape protection, management and planning" of all landscapes, through cooperative processes that should increase the awareness of the living landscapes (Council of Europe, 2000). The European Landscape Convention does not have an equivalent counterpart in the EU legislative framework, as landscape has been regulated indirectly, and legal protection has been accorded only to the environment and to the sustainable use of the exhaustible stocks of natural resources. A regulation focusing directly on landscape has been developed at national level by the EU member States. As regards Italy, landscape is considered mainly as a cultural good. Nevertheless, also in the Italian law (in particular with the coming into force of the L.D. 42/2004 - known as Code of the Cultural Heritage and Landscape) the concept of landscape is the result of all the natural and cultural elements observed, assessed in their individuality and in their interaction.

if they are planned in a development process that involves a broader area of which the city is the trigger factor (La Rocca, 2013).

In relation to these conditions and considering that it is difficult to generalise - because of the different characteristics of each city that cannot be transcended by the chronicity of the problems that over time may have taken a consistent dimension - the awareness of a lack of national urban policies integrated with a good local government, is shared. Smart or effective sustainable resolutions, projectable into the medium-long term, cannot exist except through strategies and objectives in line with local, national urban policies and European perspective on smart key (Mistretta et al., 2013). It is therefore necessary to look at new approaches and innovative forms of governance, which should be stronger and more radical. At the same time they should allow a joint action plan which optimizes the mobilization of local resources, care of the common goods, efficiency and reliability of the actors involved, trust in institutions and culture and cooperation in inclusive practices. Particular attention must also be paid to the process that will lead to the adaptation of the new competitive and territorial objectives. In other words, public action has to face new challenges and new directing tasks in which its role is not weakened or marginalised by the continuous change of the global system, but adapts to the changing city, taking on a leadership of law recognised by all parties involved. This objective can be pursued not only through innovative policies and regulatory cooperation negotiated between local authorities, representatives of groups, businesses, public companies, etc., but also through correspondence between what is said and what is done (Garau, 2013).

Therefore the actors involved, overall and in a participatory manner, must assume the responsibility to activate processes and strategic projects beyond the specific roles and interests. And if, on the one hand, it is asked that the public authorities reflect on the economic and social development, going beyond administrative skills, on the other hand, communities are asked to be more active in taking on new responsibilities with respect to the balance of social and environmental sustainability in the long run.

To avoid repeating frequent failures, it is therefore necessary to have systemic and predictive visions of future scenarios, accompanied by assessments on the effectiveness of interventions put into place. This approach does not necessarily imply a loss of the central role of more “progressive” policies, but a reacquisition of a project leadership and of a systemic vision. The latter cannot be reduced exclusively to the objective of protecting and producing goods and services, but mostly to governing this dense network with its overall territorial system.

Moreover, explicit attention should be paid to the lack of istitutional stability: the government should introduce new structures and / or functions dedicated to their consolidation, so as to progress and become a reference point for citizens. This process is also crucial in the formation of a common store of knowledge among the different stakeholders involved: it is necessary to define common lines of action through the sharing of (1) knowledge on the issues and needs; (2) common cultural parameters; (3) concrete constructive approaches to public goods, etc..

However, based on this reasoning, it is necessary to point out that there are strong institutions where there are strong communities. «The collaborative approach [...] is important, as is the motivation» (Innes et al., 2003, 14). Skills, responsibilities and relationships with the community characterise the new citizenship. Social capital is of fundamental importance because it enables an effective smart, sustainable and inclusive growth. This requires the courage to get out of the consensus as an end in itself, focusing on civic and institutional trust, supporting and enhancing forms of active citizenship.

A smart city must surely trust in the full involvement and in the ability of the community to perceive the local issues and to propose and develop solutions to resolve them (through bottom-up logics). These solutions, mostly marked by a technological nature, need to be supported from above through top-down logics, so as to perceive the landscape as an ecosystem of innovation open, free and user-driven, based on the continuous development of partnerships between governments, companies, researchers and groups of citizens (Living Lab). One of the challenges of smartness is to be able to govern the change effectively, characterised by the speed of the times of action for the urban context functioning, where this place-based context, in turn, depends on the intelligent coordination between physical and intellectual resources of the community.

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4 ENHANCING PEOPLE'S PARTICIPATION: REGULATION, FINANCE AND CULTURAL HERITAGE

It is worth noticing how a network of stakeholders might facilitate the interaction between the institutions operating at a macroeconomic level and people's participation at a microeconomic level. In other words, the network might stimulate connections between the activities related to the accumulation of social capital in terms of a collective identity (within an ethic and aesthetic perspective) and the activities of the public institutions interested in developing participated processes of decision making at every geographical scale and economic sector. The contribution of the stakeholders is twofold: firstly, they can integrate the economic accountability with social and environmental issues; secondly, they can explore the landscape at a local level identifying meanings of collective relevance and stimulating people's involvement in landscape transformation processes, both at a decisional level and in the implementation phase.

However, the implementation of a participated process at territorial level is not an easy task. Specifically, it requires: an ad hoc regulation that enables the process; a set of tools able to incentivize the private involvement in the implementation processes of smart initiatives; a set of methodologies able to manage the complexity of the information collected and of the relations activated by the promoters. These three elements might facilitate the participation of the interested citizens in the development and implementation of landscape transformation policies. They might be considered as important as the Environmental Impact Assessment (EIA) at a political and economic (financial and real) level, and as complements to it in order to develop territorial and urban planning activities in coherence with the principle of equitable and sustainable welfare.

4.1 The Regulation Impact Analysis (RIA): a brief overview

The RIA was introduced for the first time at the beginning of the Seventies in the USA as a monitoring tool of the quality and quantity of regulation approved by the Regulatory Agencies. During the Eighties, the RIA was also adopted in Australia and in the United Kingdom, and, during the Nineties, the OECD, through the Public Management Committee (PUMA), promoted the spread of the RIA throughout the European Union and its Member States. At an EU level, the issues of simplification and of better regulation acquired a strategic relevance during the European Council of Edinburgh (1992) and with the White Paper on "Growth, Competitiveness and Employment" (1993). In 2000, the European Council of Lisbon asked the European Commission, the Council and the Member States to develop a coordinated strategy to simplify the regulatory framework and the public administration procedures at European and national level by 2001. A few years later, the European Council of Brussels (2003) asked the Commission to assess how the regulatory reform might contribute to the achievement of goals of the Lisbon Strategy. The European Council of Brussels also supported the implementation of the Action Plan "Simplifying and improving the regulatory environment", presented by the European Commission in 2002.[2]

In Italy, the RIA was introduced in Article 5 of the Law n. 50/1999, by which Parliament delegates the Government to define an experimental assessment of the impacts of regulation on the organization of public administration and on the activities of citizens and firms. The same Law attributes to the Parliamentary Commissions the faculty to require a RIA of the normative drafts and of the proposals of law of their competence. The Directive of the President of the Council of Ministries of March 27th 2000 finally introduced the RIA in the Italian legislative system as an experimental activity (Greco, 2003). In 2001, the Italian Government published the "Guida alla sperimentazione dell'analisi di impatto della regolamentazione (AIR)",[3] which illustrates the RIA procedure and highlights logical frameworks and methodological issues that might be used in the assessment activities. Finally, Article 2 of the Law n. 229/2003 delegates the Government adopt a Legislative Decree for the reform of the legal norms regarding the production, the simplification and the quality of regulation. In the same years, the Italian Independent Authorities developed autonomous procedures of regulation impact analysis, and enforced their diffusion among the other central and local public administrations in order to facilitate the existing coordination mechanisms and increase the quality of regulation.

[2] Specifically, the Action Plan aims to enforce the proposal of the Commission to support the most relevant regulatory proposals with a consultation of all the interested people and institutions, and with an overall assessment of the expected impacts (Greco, 2003).
[3] "A guide to the experimental use of the Regulation Impact analysis".

Two important activities promoted by the Independent authorities are the RIA on Competition developed by the Antitrust Authority and the on line consultations instituted by the CONSOB on regulatory projects related to the markets of capitals. Some applications of interest for the participation in landscape transformation policies are the Antitrust reports concerning the quality of regulation in the Toscana Region (AGCM, 2007) and the effects on competition of the regulation of the retail sector (AGCM, 2007), and the CONSOB online consultation concerning the adoption of a new regulation of the equity-based crowdfunding (CONSOB, 2013). More detailed information on the state-of-the-art of RIA in Italy is provided by the RIA Observatory.[4]

4.2 Crowdsourcing and crowdfunding in territorial policies

Participation in the implementation phase means taking part in the process both at a financial and at an economic level. Specifically, at a financial level people interested in participating in a project might be involved in the fund raising activities through the implementation of crowdfunding processes. As it has been pointed out by Ordanini, Miceli, Pizzetti and Parasuraman (OMPP), crowdfunding is "a collective effort of people who network and pool their money together […] to invest in and support efforts initiated by other people or organizations" (OMPP, 2011). Indeed, "the idea that some people may decide to pay for producing and promoting a product (instead of buying it), and run the risk associated with that decision, represents a step ahead in the evolution of consumers' roles, that involves a mix of entrepreneurship and social network participation" (OMPP, 2011). Following the authors, three kinds of players are involved in crowdfunding models. Firstly, "there are the actors that propose the ideas and the projects that need to be financed" (OMPP, 2011). Secondly, "there is a crowd of people that decide to invest in these projects", participating also in selecting and developing the goods or services they consider "to be most promising or interesting" (OMPP, 2011). Finally, a crowdfunding institution connects investors and producers (OMPP, 2011).

"Crowdfunding has been boosted by the new achievements of the Web 2.0", allowing consumers to participate actively in the development and creation of the project itself through social networks (OMPP, 2011). Even if crowdfunding has some features in common with charity and social cooperation, it is also true that "money is invested by consumers to obtain a return, mostly financial, but sometimes intangible", in terms of "status, social esteem, identification, etc." (OMPP, 2011). Crowdfunding models include elements of crowdsourcing, "a procedure that enables the members of a community to share ideas and efforts to solve a problem or to create favourable conditions for the community itself" (OMPP, 2011). Crowdsourcing might enable people's participation in the implementation of public projects. Specifically, people's participation in landscape transformation interventions might be enabled by fractioning a project, or a part of it, into elementary activities that might be devolved to the free or regulated implementation of the interested citizens and firms on a voluntary basis. As an example, in the management of a park several areas might be dedicated to the free use of people, who might decide to plant new trees, vegetation or flowers, or simply use it to relax and talk with other people. Similar processes might be planned also in the implementation of decorative structures in selected parts of a city or of a village.

Clearly, crowdsourcing should not refer only to landscape planning in a narrow sense, but to all those activities that might be of interest for the community that lives in the landscape (social and recreational activities, welfare services and immaterial infrastructures, economic activities, etc.). The promotion of crowdsourcing activities on a large scale might contribute to increasing people's sense of community, augmenting also the number and the quality of the dimensions involved in the definition of people's well-being. Specifically, the concept of individual well-being might be complemented by topics usually referring to a collective idea of well-being, legitimizing also at an individual level the choice of promoting social capital as a bridging value among private and public narratives, and landscape as an important determinant of people's quality of life.

Finally, at an economic level, the process of people's permanent involvement in landscape transformation activities might counterbalance the widespread diffusion of the illegal economy during recessions. Specifically, during crises the criminal economy constitutes a sort of buffer for the legal activities, and the main deterrent seems to be that of reviving growth even when it implies paying high social costs. Recently a team of World Bank practitioners proposed as an anticorruption measure, the empowerment of the local

[4] "Osservatorio AIR", http://www.osservatorioair.it

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communities, highlighting also how they suffer the major negative consequences from the increment of illegal activities (Recanatini, 2011). Consequently, living in the landscape and participating in the development of a collective identity can contribute to reducing the levels of corruption and crime, and redirecting the productive structure towards sectors of higher added value by transferring the risks associated with the investments.

4.3 Cultural heritage and ICT's for the territorial development

The problem of economic development is of particular significance in connection with the need to fill the gaps and socio-economic imbalances between different areas and social groups, with respect to the quality of life offered to their respective populations. Culture, in these situations - as a mix of tangible and intangible aspects - plays a critical role in the persistence or the overcoming of 'vicious' circles. This is due basically to the fact that, for cultural heritage, the use of culture is translated into the production of other culture, and this, in turn, into the best economic and social performance, contrary to what happens for normal economic goods, where consumption leads to the exhaustion the good consumed.

It is therefore crucial for cities, especially marginalised territories and communities to develop cultural projects in line with the preferences of its users (residents and tourists).

From an economic point of view culture appears as a concept that can be interpreted in two ways: the first refers to the beliefs, habits and customs of a social group, and the second refers to a range of human activities and their products that are concerned with the intellectual, moral and artistic aspects (Throsby, 2005). A marked presence of tangible and intangible aspects is highlighted especially in the goods that constitute the concrete explanation, the so-called artistic historical cultural heritages (AHCH). In them culture is reflected in the different forms in which value can manifest itself (eg, aesthetic, spiritual, social, symbolic, historical, authenticity, etc..). Due to their peculiar nature, another characteristic element of AHCH is the ability to produce private and collective benefits: the first are directly related to the experience of "consumption" of such goods by users (for instance the purchase of an artwork by a public or private subject), the latter are directly related to the number of effects and side effects, in terms of economic and social exchanges that are generated and spread throughout a community.

Positive externalities - such as the increase in employment levels - can then be added to these benefits.

For these reasons, several studies show that culture can have a decisive impact on economic performance on three main fronts: 1) efficiency - by reducing the so-called transaction costs – 2) equity - through a reorganization of moral rules or customs – 3) social goals - through the establishment of a new equilibrium with respect to the achievement of tangible and intangible benefits. In essence, it could be said that the consumption of culture is not limited to the time itself, but it produces - unlike with so-called normal goods - other culture and further consumption of all goods that are connected to it.

To sum up, the fruition of culture does not end in the moment itself. Instead, it generates – in opposition to what happens with other normal goods – more culture and additional consumption of all the goods that are culturally-related. Moreover, the AHCH can be significantly increased through Information and Communication Technology (ICTs), as they can generate powerful territorial attractors that push individuals (tourist operators, intellectuals, visitors and tourists etc.) to visit the places that host the AHCH so that they have a direct vision and perception of them.

Indeed new technologies allow the definition of networks of AHCH aimed at sharing and managing information, indicating, also in marginalised and disadvantaged places, nexus and linkages, that can define concepts such as "open museum" or "territorial museum" that otherwise would lack of any concrete meaning (Minucciani, 2005). Contemporary museums should not be intended as places involved in the preservation and contemplation of the artworks they contain, as they should, instead, restore the original circuit of communication; in other words, new AHCH fruition styles are emerging (Caputo, 2008), in which representation is not simply a box containing the information, but is a way to shape contents (Cirafici, 2010). Historically born in opposition to this function (a museum contains objects), the museum space has often been accused of decontextualising artworks (Antinucci, 2004). This problem persists and the museum cannot communicate, as its communicative function depends on fruition based on the mere contemplation of artworks, which cannot provide information on them (Monaci, 2005). The contribution that smart cities can

provide to the development of a place must be contextualised in this scenario, and it consists of the shared use of resources according to a networking approach.

Specifically, we do not refer to those applications, created with the web 1.0, aimed at creating products for dissemination purposes, or to databases and online archives directed at proficient users. We refer, instead, to those solutions that draw linkages among AHCH belonging to different subjects – i.e. institutions that enable customised paths regarding different interests (cultural heritage, paintings, sculpture, etc.). This perspective is the product of a new culture of museums, coherent with the principles of the network economy (Grannoveter, 1973): the preservation goal evolves, overcoming the limit of the goods contained in the "containers of AHCH", and including the city and the connected urban landscape.

With this new focus for cultural heritage, a smart vocation of the city, towards the enhancement of all that constitutes the cultural heritage of its community, emerges. The reference principle is that knowledge is no longer seen as a mere storage of data, but rather as a process of exchange in which the AHCH value requires a new model for the organization and use of the cultural heritage, integrated with innovative service structures and communication networks, capable of orienting economic development processes. This is the perspective in which it is necessary to take into account a system of systems, or, in other words, a network which is a complex of services that enable the AHCH use, becoming a research laboratory and an incubator of new economies.

To implement those potentialities a smart city, cannot be separated from a governance system based on a network approach, that is able to systematise the various AHCH operators and all existing and potential users located in a landscape (with particular attention to social and / or urban marginalised areas) in order to encourage a revival of the development and growth of the territory, in accordance with the cultural identities that characterize it.

Instrumental to this purpose is:

(1) To strictly refer to the institutions that preserve and manage AHCH heritages. The choice is motivated by the fact that these institutions aim at saving goods with a high merit, that are able to generate not only economic value, but also social value, regarding the quantity and the quality of the net benefits perceived by direct and indirect consumers, future consumers and potential consumers.

(2) The empowerment of the ICT for experiencing the consumption of AHCH can always be more interactive and inclusive.

The accessibility and consumption of AHCH in a smart city environment must not be fragmented and contained by disconnected real and/or virtual contexts, but should be opened – through the adoption of technological innovations – to even more numerous and intense new connections. This dynamic must have a counterpart in the new kinds of interactions among artworks consumers, cultural contents providers and landscape, which should be able to generate multiple consumption patterns, in a flexible and adaptable framework. This need is due to the continuous evolution of and to the numerous opportunities offered by the ICTs to experiment different patterns of fruition of the historical-environmental heritage such as the implementation of alternative touristic routes (developed using a GIS), which can be easily observed using mobile devices. Consequently, the visiting patterns, usually made of audio-video contents (Garau et al., 2014), can be complemented with all the relevant information (street directions, restaurants, hotels…) for a complex experience of the city. By reducing the transaction costs of access and management of the AHCH a higher level of accessibility and knowledge is reached, but also more skills in the management of information are generated, and through them:

(1) a widespread diffusion of tangible and intangible benefits;

(2) a higher degree of dynamic efficiency in terms of better distributed welfare (also in terms of accessibility to cultural heritage);

(3) a higher level of intra-generational equity related to the opportunity for the current generation to have a access to AHCH associated to a higher level of preservation of cultural heritage.

5 CONCLUDING REMARKS

Managing policies with responsibility, reflecting on the international competition, involving the actors in a "common direction" by organizing collective action, mobilising resources in a cohesive way, also closer to

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the needs and resources of the community. They are among the many issues that we consider necessary and indispensable in implementing a smart city. First and foremost, it is necessary to be aware of what all this means, in terms not only of technical feasibility, but also of policy and human capital feasibility. In other words, is there the political will to move the axes of the reasoning that has so far characterised the government? The approach that public authorities must assume, is multidisciplinary, and governed by a "visionary leadership". Moreover, it implies shared values, concerted actions, mobilization of resources and more attention paid to communities.

Secondly, researchers and practitioners might contribute to facilitating the connections among the accumulation of social capital in terms of a collective identity and the activity of the public institutions interested in developing participated processes of decision. All the information collected can be integrated at macro level in an ethic vision of the landscape of interest. The issues that emerge from the narratives collected can be integrated with those which come from quantitative analyses and from regulation analyses with the aim of creating complete information available to the policy makers. A tool of analysis at political level that has been developed according to this integrated framework is the Regulation Impact Analysis. Crowdfunding and crowdsourcing, instead, are tools that might facilitate the participation of the interested citizens at the implementation phase.

Thirdly, people living and using the smart city can act as explorers at every geographical scale, contributing to reviving the narratives that animate daily life. Geographical scales and elements of scarce interest at institutional level (as an example, a neighbourhood, a square, a park, a street or even a block of flats) might emerge as the most relevant in many individual and small group narratives enforcing both the ethic and the aesthetic perspective.

By using an ad hoc analytical structure, all the information collected can be integrated at macro level obtaining as output an ethic vision of the landscape of interest. "Ethic" means the fact that the issues and the narratives collected express the view of the community that lives in it, and contribute to reinforcing its identity. The issues that emerge from these narratives can be integrated with those which come from quantitative analyses and from regulation analyses with the aim of creating complete information available for the policy makers.

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