

Smart Cities and Destination Management: Impacts and Opportunities for Tourism Competitiveness

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Abstract

In the latest years, the smart city theme has been widely discussed in both city planning and academic studies from various perspectives, i.e. technology, sustainability, management and tourism. This is mainly due to the urgency of rethinking the city because of the rapid population growth and the urbanization increase. These challenges are triggering many cities to find smarter management ways. Nonetheless, only a limited number of studies investigated systematically the smart cities phenomenon and its impact on tourism. In this research, we try to understand the smart city concept considering the strategic role of technologies as opportunities in the smart tourist destination, trying to fill the literature research gaps by identifying how cities have to manage urban planning to be labelled as “smart”, what can be the applications of smart strategies to tourism, what resources/capabilities smart cities need to possess to catch opportunities and face challenges coming from the tourism market, how the smart city planning and its tourist applications can enhance destinations competitiveness. The empirical analysis tests four successful smart cities: Milan, Singapore, London and Johannesburg. The final part includes some reflections on the integration of tourism development with city planning and its effects on urban smartness.

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Introduction

In the last years, the European Union and several international Institutions have devoted intense efforts to design and implement a strategy to achieve urban growth in a ‘smart

sense. By smart, it is meant the integration of technological and social factors to the urban development system, in order to produce sustainable cities. Reaching this objective requires the adoption of an urban management

plan that can constantly link Information and Communication Technology (ICT) to governance and decision-making strategies about the principal functions of a city (Boes *et al.*, 2015).

Smart cities highlight the importance of ICTs for improving the competitiveness of a city (Boes *et al.*, 2015; Caragliu *et al.*, 2009; Lamsfus, Alzua-Sorzabal, 2013). Of course, the ICT infrastructures are not the only component of a smart or intelligent city: human capital and education in urban development (Bakici *et al.*, 2013; Berry, Glaeser, 2005) have to be taken into account, up to get to a progressive “clusterization” that is becoming a major concern.

The concept of smart city is still emerging, and the work of defining and conceptualizing is in progress. Nonetheless, the general characteristics of a smart city can be summarized as follows:

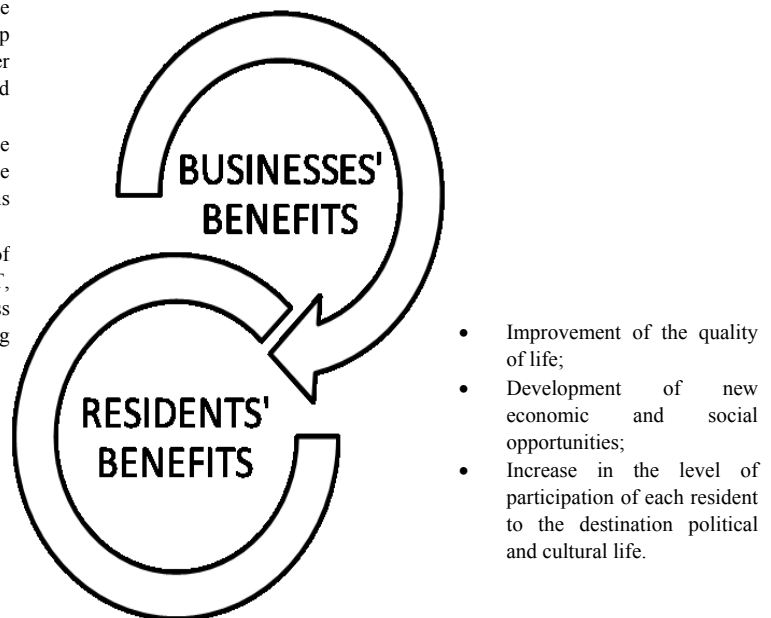
- the utilization of networked infrastructure – business services, leisure and lifestyle

- Greater visibility on global markets, access to worldwide users;
- Thanks to the closer contact with the demand, it is possible to develop visitors databases that can deliver important information about interested targets, their principal characteristics;
- Through the creation of forums, it can be possible to verify the correspondence between the destination expectations and the visit experience;
- Possibility to favor the development of interfirm relationships through ICT, making the communication process faster and simpler and favoring knowledge sharing.

services, ICTs - to improve economic and political efficiency and enable social, cultural and urban development (Del Chiappa, Baggio, 2015; Hollands, 2008);

- an “underlying emphasis on business-friendly urban development” (Hollands, 2008: 308), in order to attract new business and improve the socio-economic performance;
- a strong focus on social inclusion of various urban residents in public services;
- a particular attention to the benefits of technology on the local community (Coe *et al.*, 2001).
- social and environmental sustainability as a major strategic component of smart cities.

Quoting Europe 2020 initiatives, involved and potential stakeholders are no longer considered only “bearers” of interests, but real partners and promoters of coordinated initiatives. In this perspective, it must be empowered and stimulated the direct involvement of all local business actors (Shaffers *et al.*, 2011). Therefore, it is crucial to develop physical and



- Improvement of the quality of life;
- Development of new economic and social opportunities;
- Increase in the level of participation of each resident to the destination political and cultural life.

Figure 1. Information systems: benefits for businesses and residents (elaboration by Della Corte, 2009, 2013).

virtual infrastructures able to connect key stakeholders, such as industry, researchers, developers, organizations, local authorities, with the core functions of the city (i.e. universities, hospitals, stations, airports, harbours, etc.).

The above-mentioned reflections are hints that help understanding how smart processes can improve the quality of the users' experience in a territory (Della Corte, 2009, 2013, 2014). The adopting perspective, starting with people involvement, allows conceptualizing the smart city as a place where both technologies and human capabilities meet perfectly. Figure 1 shows the importance of smart city planning both for residents and businesses.

In this work, we identify some critical factors that directly affect smart cities initiatives linked to tourism: destination management and organization, governance and marketing, which influence directly technology, policy context, people, communities and the natural environment. From a tourism point of view, the era of ICT has helped tourism destinations in facing a set of new challenges arising from changes in both consumers and the environment. ICT could contribute effectively in terms of creating value-added experiences for tourists, while also improving efficiency for the related destination (Gretzel 2011; Komninos *et al.*, 2013; Werthner, Ricci, 2004). Starting from the above-said assumptions, this paper investigates relationships between smart city and tourist destination management pointing out the need for integrating tourist development and urban management. This paper tries to fill the research gaps by identifying:

- how cities have to manage urban development and city planning at all levels in order to be labelled as "smart";
- what can be the applications of smart strategies to the tourism and hospitality sector;
- what are the resources and capabilities smart cities need to possess in order to catch opportunities and face challenges coming from the tourism market;
- how the Smart City planning and its tourist applications can enhance destinations competitiveness.

In particular, we focus on governance and management models, together with marketing initiatives, that are fundamental to develop and implement collaborative innovation activities of the four analysed cities as tourist destinations. These factors, linked together into a smart cities framework, can be useful to study and determine success factors of city initiatives or projects. The research is divided into three parts. The first section describes the elements that define a Smart City and its implications in a tourism perspective, through a short review of the recent literature, in order to get to the definition of the Smart Tourism Destination. Particularly, we focus on destination management, governance and marketing. The second part empirically tests the aspects regarding the practice of smart cities with the analysis of four successful smart city cases: Milan, Singapore, London and Johannesburg. The third final part includes some reflections on the possibility that the integration between tourist development targets and the city planning needs could offer in defining the urban smartness.

Literature review

The term "smart city" has become popular over the past decade (Bowerman *et al.*, 2000; Graham, Marvin, 1996; Hollands, 2008; Kitchin, 2014; Mitchell, 2000; Nam, Pardo, 2011; Washburn *et al.*, 2010;) and has typically been associated to "technology embedded ecosystems that attempt to build synergies with their social components in order to enhance citizens' quality of life and to improve the efficiency of the city services" (Buhalis, Amaranggana, 2013: 555).

Forrester Research Inc. (2010: 3) defines the smart city as "a city that uses information and communications technologies to make the critical infrastructure components and services of a city — administration, education, healthcare, public safety, real estate, transportation, and utilities — more aware, interactive, and efficient". The terms "smart cities" or "intelligent cities" are often being used to denote the use of advanced ICT infrastructure to improve the activities, services and the economic development of cities. ICT can represent the core of use-driven open innovation, characterized by real-life

experimentations and cooperation among all stakeholders, including users across the value chain.

Cohen (2014) has developed the Smart City Wheel as a tool to support the development of smart cities strategies as well as tracking their progress. Within this wheel, he defined six smartness dimensions:

1. *smart governance*, linked to transparency within governance systems through the modernization of city administration by the support of data openness and public involvement;
2. *smart environment*, which is related to energy optimization and sustainable management of available resources;
3. *smart mobility*, which refers to the presence of ICT infrastructure, to the accessibility within and outside the city and to the availability of modern transportation systems;
4. *smart economy*, related to the implementation of economic strategies based on digital technology;
5. *smart people*, linked to the qualification level of city's human capital;
6. *smart living*, which involves the quality of life measured in terms of healthy environment, social cohesion, tourist attraction and availability of cultural and educational services. Some academics authors (Table 1) tried to extend the conceptualization of these characteristics, in order to better define them and calculate the effective "smartness" of a city in an easier way.

In Table 1, the main variables identified by the literature on the theme are summarized. As it can be seen, the variables "touristic attractivity" and "hospitality" are included in the "smart living" dimension. Recently, some authors (Buhalis, 2000; Buhalis, Amaranggana, 2013; Gretzel *et al.*, 2015; Wang *et al.*, 2013;) deepened the analysis of "smart tourism", linking the destination components to the six smart city dimensions.

In fact, successful destinations can be structured as the 6As of tourism destinations (Buhalis, 2000):

- *Attractions*, which can be natural, artificial or cultural;

- *Accessibility*, which refers to the transportation system of the destination, comprising available routes, airport terminals and public transportations;
- *Amenities*, which include all services facilitating a comfortable stay, i.e. accommodation, restaurants and leisure activities;
- *Available Packages*, referring to the availability of services bundled by intermediaries that promote a respective destination;
- *Activities*, referring to all the available activities that could stimulate tourists to visit the destination;
- *Ancillary Services*, those daily use services that are not primarily aimed for tourist such as banks and hospitals.

In the present research, we adopt an updated 6As model made by Della Corte (2009; 2013): the elements that characterized a destination are the access, the attractions, the accommodation, the amenities, the assemblage and the ancillary services.

It is fundamental for destinations to strengthen each of their 6As to be highly competitive in the sector. Nonetheless, thanks to the widespread diffusion of the process of co-creation, destinations also need to link their stakeholders to facilitate dynamic collaborative activities and to increase destination competitiveness (Neuhofer *et al.* 2012). Cohen (2012) defined a range of smart services (augmented reality, multi-language application, Complaints Management Systems supported by ICT channels etc.) that shows how 6As destination components and smart dimensions could be combined and possibly generate tourism applications. Starting from these observations, in Table 2 we tried to make clearer the possible relationship between the 6As of the destination and the six smart city dimensions.

Various actors (researchers, local government and businesses) can cooperate in the process of a Smart City planning implementation in order to co-create Destination Management smart strategies. In this perspective, smart tourism destinations can take advantage of digital tools to achieve a set of solutions (Lamsfus *et al.*, 2015).

Table 1. Six smart cities dimensions: explanatory variables

Characteristics	Explanatory Variables	Studies
Smart Governance (participation)	Participation in decision-making, E-democracy, Branding, Public and social services, Transparency, Political strategies and perspectives.	Nam, Pardo, (2011), Lam (2005), Bakıcı <i>et al.</i> (2013), Caragliu <i>et al.</i> (2009), Chourabi <i>et al.</i> (2012), European Green City Index (2009), Dirks <i>et al.</i> (2009), Giffinger <i>et al.</i> (2007), Neirotti <i>et al.</i> (2014) Toppeta (2010) and Washburn <i>et al.</i> (2010), Errichiello, Micera (2015).
Smart Environment (natural resources)	Attractivity of natural conditions, Green/renewable energies, Pollution, Environmental protection, Sustainable resource management.	Atzori, Iera, Morabito (2010), Caragliu <i>et al.</i> (2009), European Green Bullard (2007), City Index (2009), Chourabi <i>et al.</i> (2012), Inayatullah (2011), Neirotti <i>et al.</i> (2014), Nam, Pardo (2011) and Tiwari <i>et al.</i> (2011).
Smart Mobility (transport and ICT)	Local accessibility, (International accessibility, Availability of ICT infrastructure, Sustainable, innovative and safe transport systems, City logistics.	Atzori <i>et al.</i> (2010), Neirotti <i>et al.</i> (2014) Caragliu <i>et al.</i> (2009), Dirks <i>et al.</i> (2009), European Green City Index (2009), Nam, Pardo (2011), The Climate Group <i>et al.</i> (2011), Toppeta (2010) and Washburn <i>et al.</i> (2010).
Smart Economy (competitiveness)	Innovative Spirit, Entrepreneurship, Productivity, Human capital management, International embeddedness, Ability to transform.	Nam, Pardo (2011), Bakıcı <i>et al.</i> (2013), European Green City Index (2009), Caragliu <i>et al.</i> (2009), Chourabi <i>et al.</i> (2012), Neirotti <i>et al.</i> (2014); Mahizhnan (1999) and Toppeta (2010).
Smart People (social and human capital)	Partnerships, Education, Social and ethnic plurality, Flexibility, Creativity, Cosmopolitanism/Openmindedness, Participation in public life.	Nam, Pardo (2011), Atzori <i>et al.</i> (2010), Bakıcı, Almirall, Wareham (2013), Caragliu <i>et al.</i> (2009), European Green City Index (2009), Chourabi <i>et al.</i> (2012), Neirotti <i>et al.</i> (2014) Mahizhnan (1999), Dirks, Keeling (2009), Washburn <i>et al.</i> (2010) and Toppeta (2010), Errichiello, Marasco (2014; 2017), Marasco, Errichiello (2016),
Smart Living (quality of life)	Cultural facilities, Health conditions, Individual safety, Housing quality, Education facilities, Hospitality, Touristic attractivity, Social cohesion/inclusion.	Washburn <i>et al.</i> (2010), Neirotti <i>et al.</i> (2014), European Green City Index (2009), Atzori <i>et al.</i> (2010), Dirks <i>et al.</i> (2009), Nam and Pardo (2011), Bakıcı <i>et al.</i> (2013), Caragliu <i>et al.</i> (2009), Chourabi <i>et al.</i> (2012), Mahizhnan (1999) and Toppeta (2010).

Source: Our elaboration.

Table 2. 6As destination components and smart dimensions

Destination components	Smart dimensions
Attractions	Smart environment, smart living
Access	Smart mobility, smart governance
Amenities	Smart living, smart environment
Assemblage	Smart governance, smart people
Accommodation	Smart living
Ancillary services	Smart economy, smart governance

Source: Our elaboration.

Smart Tourist Destination: management and governance

Over time, various definitions of Destination Management (DM) have been elaborated. Martini (2005) defines DM as a set of strategic

organizational and operational decisions, through which managing a process of definition, promotion and marketing of tourism products emerged from a territory, in order to generate a sustainable and appropriate incoming tourism to satisfy economic needs of

the involved actors. Della Corte (2013) indicates DM as the strategic process of territory government, whose main objectives are (Della Corte, Sciarelli, 2012; Bieger, 1998; Kozak, Baloglu, 2011): developing territorial strategies; developing an integrated marketing plan; developing a culture of local welcoming; building an adequate destination image; initiating a process of sustainable development. In case of lack of inter-firm collaboration goals, it is necessary to foresee a pivot actor to guide the whole process with a use of planning and control systems.

Buhalis and Amaranggana (2013; 2015) introduce the concept of Smart Tourism Destinations (STD), which emerges from the development of Smart Cities. By applying smart strategies to encounter the tourists' needs before, during and after their vacation, destinations can increase their competitiveness. Linking city smartness to Tourism Destinations requires a dynamic and constant interconnection of the stakeholders and the destination managers through information exchange and sharing. This can improve tourism resources management in the destination, (Buhalis, Amaranggana, 2013; Micera *et al.*, 2013), with the involvement of tourism organisations, governments, local residents and tourists.

Creating STD requires leaders to engage constructively with locals, to ensure community participation and regularly monitor the plan (Buhalis, Amaranggana, 2015). Tourism organisations must function as smart hubs that coordinate all relevant information and make it easily accessible for users. They have the task of digitalise the core business processes, to optimise their energy use, to engage with local communities, tourists and government in co-creating tourism experience (Buonincontri, Micera, 2016). It is fundamental to speed decision making and to be responsive to customers' needs based on just-in-time insights; in order to do so, tourism organisations must get involved in processes of precise targeting and personalised service (Belissent, 2011). Therefore, the principal role of governments in STD deals with supporting data openness, regulating data privacy and establishing public-private partnerships. The

operational advantages of public-private partnerships rely in fostering efficiency, supporting creativity and inducing innovation to flourish (Errichiello, Marasco, 2014; 2017; Heeley, 2011; Marasco, Errichiello, 2016). Pattern towards smartness for a city needs innovative tangible and intangible infrastructures, citizens life style, urban spaces rethinking, economic outputs, etc. All the process requires a complete revision of government policies and a deep involvement of all stakeholders: multinational and social firms, small and medium enterprises, universities, research institutions, associations and local institutions. All the depicted actions should be considered in a strategic framework of coordination within stakeholders and between actors and governance (Errichiello, Micera, 2015).

Smart tourist destinations and marketing strategy

Visitors' overall experience is made of numerous small exchanges with a variety of tourism actors (transports, restaurants, tour operators, hoteliers, travel agents etc.) that affect the overall image of a destination after the visit. Consequently, there is a great overlapping between the marketing of the destination and each supplier operating in the destination itself. Hence, the competitiveness of each player is often interrelated and must be strategically managed (Pigram, 1996; Archer, 1996). Meanwhile, local resources become a central asset for destinations and their sustainability is a core function of tourism marketing. Hence, marketing activities must take into account the strategic objectives of all stakeholders as well as the sustainability of local resources.

In a STD, the co-creation of tourist experience regards not only the experience customization, but also the increasing involvement of DMOs in tourists' "experience sharing" (Chen *et al.*, 2012). DMOs have to provide comprehensive information about local attractions and spread the presence of location-based services (LBS) which deliver to tourists a better understanding of the attractions and activities of the destination they are visiting. DMOs of STDs are more sensitive in engaging in conversations with (real and potential) tourists via social

media. Thanks to the ubiquitous support of the Internet, tourists can instantly share experiences and photos with others users to acquire information, feedback and suggestions before, during and after the visit experience. Therefore, tourists are not only an active part of the experience creation, but this collaboration is real-time and multi-directional. The experience sharing is a big opportunity for enhancing the value tourists receive from their visit. Simultaneously, DMOs can take advantage from the new opportunities created by ICT by acquiring more insights on the demands and preferences of tourists.

Hence, tourism marketing is as a strategic mechanism that can support the destination planning and management. Sometimes, destinations may also be forced to start de-marketing activities, for example to discourage certain market segments from visiting the destination during certain periods, since it is too crowd or polluted. These activities may involve a range of prohibitive measures or the charge of premium prices to visit the destination.

STD management, governance and marketing are intertwined strongly. Hence, there is the need of a strong governance able to catch or create opportunities and implement them efficiently in coordination with local actors. In these terms, destination management, governance and marketing represent the theoretical foundation for a Tourist Smart City Development. On the basis of the analysed theoretical background, our aim is to deepen what are the key resources, the capabilities and the best applications realized by smart cities in the tourism sector and their impact on destinations competitiveness.

Research methodology

The research method used in order to test the chosen theoretical background is a multiple case study analysis: the case study is "a research strategy that focuses on understanding the dynamics present within single settings" (Eisenhardt, 1989). It combines different data collection methods, such as archives, interviews, questionnaires, and observations. The evidences may be both qualitative, quantitative or both. Case studies allow to collect a lot of details, hence the

analysis can be a lot richer and of greater depth; this approach also help experiments to produce hypotheses that can be used for future testing.

On the other side, one of the main criticisms is that the data collection cannot necessarily be generalized to the wider population, hence not always relevant; case studies also tend to collect mainly qualitative data, and this sometimes could make it difficult to draw a definite cause/effect relationship (Yin, 2013). The case study approach has been applied to four cities that developed smart projects and best practices: Milan, Singapore, London and Johannesburg, at different stages of their smartness route. The research aims at analysing and at identifying the fields with the greatest diffusion of smart initiatives. Moreover, we aim at detecting commonalities and differences in the patterns of development across the countries. The second step of the empirical study involves a more comprehensive analysis towards the building of a conceptual model able to detect dimensions of tourist city smartness.

The phases that have defined the study of the above-mentioned cases are (1) design of the research; (2) planning of activities for both preparation, data collection and processing; (3) interpretations of obtained results and the conclusions. The empirical research has been carried out by means of a desk analysis and through the collection of secondary data. The methodology implied to select the four above-mentioned cities as case studies is the following:

1. the mapping was based on a database of 60 countries, analysing for each of them the 70 cities which the largest metropolitan areas (a population of at least one million);
2. there have been analysed the most important global and international smart cities rankings made by the European Commission, IBM, Forbes, Global Green Economy Index;
3. with reference to the six smart city dimensions, it has been selected the best case in Italy, Europe, Asia and Africa.

Milan scored the 1st place as the smartest city in Italy; London is the 5th city in the world ranking for its smartness, but the 1st in Europe

for smartness and number of citizens, while Singapore is the 8th smart city in the world, but the 1st in Asia, and Johannesburg is the 1st smart city in South Africa. The selected case studies have been studied through a cross analysis.

The findings aim at revealing how tourism destination management can influence and be influenced by the new dominant perspective of Smart City. It must be underlined that there is not a unique model of success to be implemented in order to improve a city. Therefore, the first step is the definition of the smart plan that the city management follows and the identification of the areas that the city should improve in order to intervene specifically on the city critical factors. The multiple case study analysis have been carried out through the collection of secondary data taken from the City and Municipality reports, national, international and global rankings and web data taken from the official websites of the cities, the tourism promotional agencies and the DMOs related to the above-mentioned case studies. The case studies have been analysed following the six smart city wheel dimensions (Cohen, 2014) and the 6As of the tourist destinations (Buhalis, 2000; Della Corte, 2013).

Results

The empirical analysis aims at finding relations between the concepts of urban smartness and tourism competitiveness, underlining all the key aspects able to integrate local smart technologies and tourist flows improvements. In this situation, it can be realized an effective synergy between the theoretical idea of the smart city and all its economic and social benefits.

Milan

Since 2014, Milan has been involved in a smart wider project settled up with the help of the Milan Chamber of Commerce that involves 134 municipalities of its Province.

Smart Governance. Milan governance is supported by various smart tools and initiatives. Decision Theatre is a project that involves a cloud platform of Smart Government settlement in order to collect, integrate and exploit the information asset already available. The project

involves decision makers and citizens, who can use the innovative interfaces to interact in order to strengthen the communication between public administration and citizens. PSC Giustizia is a services platform in the field of Civil Justice. It aims at connecting Electronic Civil Trial to involve all the stakeholders who could benefit from the interaction with justice through internet (ASL, Chamber of Commerce, EE.LL, public boards and citizens, companies and credit institutions). The platform enables on-demand access to data and services. Consequences of this project for Milan are the improvement of the cost efficiency, the increasing of quality of judicial activity through new services and the reduction of judicial proceedings.

Smart Environment. S.C.U.O.L.A. Sustainable Campuses as Urban Open-Lab Areas is a project that aims at improving energy management, increasing efficiency through innovative smart grid (charging electric stations, photovoltaic systems, control devices, monitoring and energy management user). City Wise-Net involves a settlement of smart cycle with the aim of implementing energy optimization of industrial sites, thanks to waste processing for electrical energy, bio-methane, water and fertilizer renewable production. E-WASTE is a project that aims at strengthening and optimizing the recycling chain of recover metals with less environmental impact. For this aim, it will be created a network of SMEs in order to manage the cycle in the Milan hinterland through the reuse of existing spaces.

Smart Mobility. URBe-LOG is a project that aims at improving transport services of freight through an online platform for logistics management in urban areas. Consequences of this project for Milan are, in particular, in loading and unloading optimization and in the incentive mechanisms related to routing, loads consolidation and access times. Finally, OPTI-LOG - Optimal and sustainable logistics in urban areas has the goal to optimize the logistics chain of last mile and to experiment new models of freight logistics.

Smart People. Proactive is a project for the land protection with advanced ICT infrastructure, improving active citizenship and

social networks. The goal is to improve the relationship with the territory, through an innovative synthesis of heterogeneous sources: databases of PA, data collected by sensors of new generation based on high-speed networks or provided by citizens. Consequences of this project for Milan will allow data use for optimizing individual mobility and reducing public exposure to risk situations.

Smart Living. ABILITY - Telerehabilitation has the objective of realizing a Personal Health Community for management and monitoring of the rehabilitation treatments for elderly suffering from dementia and in particular from neurodegenerative diseases. Consequences of this project for Milan regard the improvement of the PA management that could evaluate and direct the services of integrated home care and mobility and redesign urban spaces to make them accessible for young and elderly.

Milan as a Smart Tourism Destination. Milan has benefited from all the actions activated for the universal exhibition "Expo2015". For that occasion, the Chamber of Commerce of Milan in 2010 made the "Tables Thematic Expo 2015" to engage the economic system and entrepreneurial start-ups in the opportunities generated by the event. About 800 projects have been presented at the tables Expo, many of which focused on the following subjects: reception and accommodation; female entrepreneurship; energy and environment; agribusiness; health; art and culture; solidarity and non-profit, youth and labour. The major projects, which have succeeded in improving tourism, are related to food and beverage, social networking, to welcome and receptivity (Table 3). All the projects contribute to make Milan the first Smart City in Italy: a real smart destination in which investments are made to improve and expand services to tourists.

Table 3. *Milan – smart projects in the tourism field*

Projects	Explanations	Website
EAT2	The restaurant owners can manage the tables not booked as a last minute flight without losing earnings.	www.eat2.com
Allergy Free Hotels	The project allows making hotel rooms suitable for guests with respiratory allergies. The thematic portal provides visitors with useful information about indoor allergies and a simple and intuitive search engine to search for hotels that offer Allergy Friendly rooms.	www.allergyfreehotels.info
UTP	A B2B platform for incoming tourism to attract and maintain visitors to Expo before/during/after their presence in the 6 months of the event at the Italian sites recognized by UNESCO.	www.geocities.ws
SMART MENU	A web app that translates the restaurant menu in the language desired by the customer by reading a QR code.	www.tavologiovani.it
NO LIMITS	The aim is to promote and develop accessible tourism that meets everyone's needs, providing adequate and timely answers to any problem or difficulty does not become an insurmountable obstacle.	www.nolimits-travel.it
EXP-LORE MILAN	A project designed by EXPO IN THE CITY. Routes underline the most famous and significant works of art in Milan and where to rediscover art history and culture spread through the streets of the city.	www.explore-milan.com
ITALIAN FOOD STORY	A digital publishing platform, a web video-magazine photo shoot that collects stories around the food theme enabling rewarding personal and group unique and distinctive experiences.	www.tavologiovani.it

Source: Our elaboration

Results. Milan represents an example of smart developing closest to top-down formulas derived also from the Expo event. The type of the interventions realized at the different smart dimension are at an embryonic stage of the path of smartness. What it is even more evident is that the effect these initiatives have on tourism represents a derivation rather than a primary purpose. Such a situation will see its evolution in the conclusion of the Expo and the involvement of the population in the broadest terms. The crucial question is also determined by the change of image of the destination, that currently attract a business clientele but willing to improve the leisure flows.

Singapore

Singapore is a small island state and is characterized by a severe scarcity of natural resources: for years, the city imported even drinking water from Malaysia. Its only strength has always been its geographic position, being located on the intersection of some of the principal international air and sea routes. Singapore's strategy aims at creating the first smart nation, being a city-state, through a range of initiatives that links integration and innovation. The final goal is not only the economic growth, but also an enhancement of the quality of life for all the actors operating in the city, from citizens to stakeholders.

Smart governance. The city has a very active smart governance program that has a strong link to the online service delivery: in fact, the 98% of the government services are accessible online by citizens (IDA Singapore, 2015). Singapore is also collaborating with China for the development of the Tianjin Eco-city, an environmentally friendly urban area under construction that will house 350,000 residents and that will be completed within 2020 (IDA Singapore, 2015).

Smart environment. Next to the Marina Bay area, Singapore hosts some mechanical "super trees" that operate as temperature moderators and ventilation ducts, also collecting rainwater. In addition, some of these trees are equipped with photovoltaic cells in order to generate solar power. Singapore's commitment to sustainability involves several fields of intervention: water management, carbon

emissions and renewable energy. The city is committed in branding itself as the leading sustainable and liveable city in Asia and a global landmark in innovating and commercializing sustainable solutions.

Smart mobility. In Singapore streets it has been built a network of sensors, cameras and GPS devices to track traffic, predicting congestion and alerting drivers to change routes. In order to avoid huge congestions, the government developed various incentives to discourage personal vehicle use, like an electronic road pricing scheme and high tax rates for new cars. At intersections, elderly and disabled citizens can ease their crossing by using special cards that extend crossing times when tapped against traffic light poles. Each car park spot is connected with a parking monitoring system that automatically increases the number of available lots during non-peak hours for visitors and also reduces the available spots for short-term parking visitors in the evening, to ensure sufficient parks are reserved for residents returning from work.

Smart economy. The Singapore's 10-years masterplan, named iN (intelligent Nation) involves the use of ICT technologies to enhance the competitiveness of key economic sector, in order to "fuel creativity and enable innovation among businesses and individuals by providing an ICT platform that supports enterprise and talent" (iN, 2015). Singapore is playing an active role in developing the Asia-Pacific Information Infrastructure, which will link the international information infrastructures within APEC and with other countries.

Smart people. The iN plan adopts a people-centric approach by stimulating citizens, firms, research institutions and the government to co-create in order to find innovative and sharing solutions. People can share their ideas and feedback through mobile applications developed to facilitate communication, such as the Beeline app that provides a demand-driven service to create new transport routes on the basis of the public needs. The government, in collaboration with schools and industries, organizes hackathons, in which computer programmers, technologists and designers collaborate on software projects. Singapore

also houses several “living labs”, which are open innovation ecosystems that integrate research and innovation processes. The principal living lab is the NTU EcoCampus – the greenest campus of the world.

Smart living. Singapore is particularly committed to greening its urban infrastructure: by now, the city has 2,155 certified green buildings, and the 80% of all Singapore buildings will be green by 2030 (iN, 2015). The 95% of Singapore homes and firms is already equipped with a super-fast, next-generation broadband network.

Singapore as a Smart Tourist Destination. The Singapore Tourism Board (STB) intensively stimulates the development of Singapore's tourism sector as it remains an important economic pillar in the city long-term strategic planning. It promotes Singapore's multi-faceted appeal as a leading business, leisure and education destination. STB also encourages a strong support and participation from Singapore citizens since they are an integral part of Singapore's identity and appeal.

In March 2010, STB launched an evolution of Singapore's destination brand – from ‘Uniquely Singapore’ to ‘YourSingapore’, which underlines Singapore's unique ability in providing a personalized experience for all visitors. The destination brand promises a concentration of user-centric travel experiences and promotional initiatives are customized to address the needs of Singapore's different target audiences. STB also engages in new digital and social media initiatives to increase the interaction with target audiences, like the recent strategic partnership with TripAdvisor, through which STB is now able to provide up-to-date user-generated contents on YourSingapore.com, such as TripAdvisor ratings, reviews and opinions on Singapore's attractions.

One of the main projects created within the iN2015 Masterplan for the tourism sector is the Digital Concierge Service: the programme delivers to every visitor his “concierge” service, anticipating his needs and providing personalized services. The wireless broadband network across Singapore allows visitors to access anywhere and anytime to a rich variety

of information and services. Moreover, the EnAbling Speedy rEgistration (EASE) for Visitors aims at maintaining and fostering the presence of the BTMICE travellers in Singapore by providing simple and rapid interactions with all the tourism service providers through a one-point registration (iN2015 Tourism, Hospitality & Retail Sub-Committee Report).

Results. Singapore has reached several progresses in implementing the Intelligent Nation (iN2015) Masterplan:

- the E-Government is ranked first in Waseda University's “International e-Government Ranking” for five consecutive years since 2009;
- for its networked readiness, the city reached the second position in the World Economic Forum's “Global Information Technology Report” index;
- it gained the UN e-Government Survey's Special Award in 2012, reaching the second position in e-participation.
- iSPRINT, a project helping SMEs in using ICT in their business, helped over 5,000 firms;
- there have been created more than 100 unique mobile services from government agencies, non-government entities (i.e. universities and hospitals) as well as private sectors;
- the Digital Concierge Program transformed the hospitality, tourism and retail sectors, catalyzing the adoption of mobile commerce and services;
- Deepening skills for high-end, high-value jobs with over 13,000 professionals benefiting from CITREP Expanded, which endorses over 400 certifications and training programs, offered by 70 course providers;
- More than 95% of homes and businesses can enjoy ultra-fast connectivity with the Next Generation Nationwide Broadband Network.

Hence, it is possible to state that the Singapore Government and the private sector are working together to transform and improve the city and the industry using ICT and making Singapore a destination of choice for all. Collaborative initiatives allow the city to continuously seek and catch opportunities and exploit the latest technologies to meet the challenges coming from the market.

London

London is recognized as a global centre for financial and professional services, as well as a major tourist destination. The city is headquarter for more than one-half of the UK's largest companies and is one of the preferred hubs for multinational companies operating in the European market. In March 2013, the Mayor of London formed the Smart London Board to shape and implement London's strategy and spread the implementation of digital technologies to define a smarter city vision.

Smart governance. The Centre for Advanced Spatial Analysis has linked London's data to an iPad wall located at the City Hall; this "control room" allows the Mayor to visualize the capital's performance in real time. In addition, the Smart London Borough Partnership encourages boroughs to free up local level data to help saving money and deliver better services.

Smart environment. London promotes the use of smart technologies to manage better demand and supply of energy and water. It is developing 3D visualizations of London's infrastructure to map underground assets and to reduce unnecessary road works. It is using CCTV to detect incidents, provides traffic alerts and new technologies to reduce the risk of collisions with cyclists and other vulnerable users. The Love Clean London initiative uses mobile phone and apps to enable citizens to report environmental issues by sending messages, uploading photographs or submitting reports. This enables councils to prioritize environmental operations where most needed.

Smart mobility. The London's road transport systems is amongst the most advanced in the world. Innovations include a congestion charging, which reduced vehicle numbers in the central business district by over 70,000 a day, the Barclays Cycle Hire Scheme and Wi-Fi on the Tube. London Buses are equipped with a "Countdown" service, which provides live bus arrival information for all 19,000 bus stops in London's network via web, SMS and roadside signs (Smart London Plan, 2013).

Smart economy. The Smart London Innovation Network supports SMEs and London's innovation community to seize and prioritize market opportunities. Level 39 is the Europe's largest 'fin tech' accelerator that already works with many companies to create new payment ways in electronic form. For example, ZipZap enables users to buy online and complete the transaction at local payment stations, improving access to online price benefits for people not able to pay online.

Smart people. The Greater London Authority (GLA) created the Talk London community to allow Londoners interacting in the policy making process. The platform hosts online discussions, surveys and focus groups on a wide range of topics. When people register to join the community, the platform collects key demographic data and users' areas of interest, enabling to target certain groups of people for particular conversations. The London Datastore is an open data-sharing portal where anyone, from citizens to researchers, can access data relating to the capital. The site provides over 500 datasets and engaged London's community in finding solutions to city's problems.

Smart living. The London Schools Atlas is an interactive online map that offers a detailed and comprehensive understanding of London schools, including attendance and potential future demand for school places in order to ensure enough places for all children in the city. The 'Tech City Stars' is led by employers to equip local young citizens who live in areas where almost the 40% of 16-24 year olds are out of work.

London as Smart Tourist Destination. London is the world's top ranked destination city (Global Destination City Index 2014) with an estimated 18.69 million international visitors in 2014 and it is the first city in the world in terms of visitor spending. The City of London Corporation supports and promotes the city as the world leader in finance and business services and provides local facilities for those living and visiting the city. The organization works in partnerships with several stakeholders (i.e. City Visitor Attractions and Retail Group,

the City Hotels Forum, the City Culture Network).

London & Partners is the official promotional company for London: it attracts visitors, businesses, events, congresses and students to the capital. L&P is particularly focused on marketing campaigns, even more after the Olympic Games. Its most successful campaign, The London Story (2013-2014) was organized in the post-Olympic period to encourage the global audience to visit the city and share their story through the "London Now See it for Yourself" initiative. The tourism marketing strategy aims at tailoring initiatives for specific audience groups, to engage the city's visitor community and to develop new audiences through social media. Among the best digital tools implemented for tourists, the London Official City Guide App includes offline maps and GPS, personalized itineraries, recommendations on weather and step-by-step travel directions. The Santander Cycles App is the self-service bike-sharing system for short journeys in inner London. Moreover, the Museum of London Streetmuseum App allows tourists to travel back in time holding their phone camera in present day London and watching images of the city's past appearance on the smartphone screen.

Results. London has reached several important outcomes in implementing the Smart London Plan 2011-2021:

- Over 450 transport apps have been created using open data;
- London Datastore receives over 30,000 visits a month;
- 1,000 people per borough engaged through City Hall's online research community;
- The London Story Campaign reached 1.6 million visits and over 250 million impressions, involving users from USA, Australia, France, Germany, Italy, Spain and UK and becoming the London & Partners most successful user campaign ever;
- The Wi-Fi system is active at 150 tube stations;
- In 2014, London invested over £1 million in free Wi-Fi in London's art galleries and museums, to ensure London has one of the fastest Wi-Fi networks globally.

- The Mayor of London has created a £ 22 million fund for technology growth companies. The smarter London is improving thanks to a coherent and ambitious plan that is putting the city in a leading position. Digital technologies are helping branding the city as an excellent destination, fostering talent and supporting sustainable prosperity.

Johannesburg

Africa is moving toward Smart City Technology in order to enhance the performance and quality of urban services. This transformation aims to achieve tangible benefits at municipal, provincial and national levels. The City of Johannesburg has recently joined the global ranks as Africa's very first Smart City (IBM, 2014). With more than 7 million people in its metropolitan area, Johannesburg is the largest city in South Africa and one of the richest in history and culture: unfortunately, years of economic turmoil have made the city famous for its high crime rate. This is the main reason why the City of Johannesburg needed a totally renewed image. To achieve this objective, the Metropolitan Municipality has embarked on a journey to transform itself into a smart city in terms of economy, environment, utilities, transportation, education, health, planning, governance and people. The aim is to provide efficient services that are easy to access and use through technology, being responsive in an open and transparent way, and ensuring financial, environmental and quality service-delivery sustainability. Some key safety elements were identified together with details of how crime prevention, asset management and infrastructure safety, crisis and emergency response, community education and engagement, governance intelligence would integrate into a single roadmap for comprehensive city development. The City's approach is cross-domain and multidisciplinary, citizen- and people-oriented: it leverages on local infrastructure, connectivity and resources and it provides an interoperable, common underlying smart platform. The Global and Development Strategy (GDS) 2040 is a plan strategy that support in providing a vision of the future and defines clear outcomes against which to measure progress. The GDS has been of great importance in building a

collective and shared vision for the future of Johannesburg.

Smart Governance. Since South Africa have hosted the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002. Deliberations at the WSSD resulted in an action-oriented plan called the Johannesburg Plan of Implementation (JPOI). Immediately after the WSSD, the Gauteng Provincial Government (GPG) adopted the Clean and Green campaign as a strategy to implement the JPOI, now called the Bontle ke Botho Clean and Green Campaign. It has adopted “sustainable living and poverty alleviation” as its overarching theme, supported by a number of cluster themes. Johannesburg’s highly populated areas are monitored by CCTV cameras, in order to analyse the footages in real time to isolate and punish crimes. Disaster prevention can benefit greatly from efficient broadband capability, and allow teams to communicate quickly in emergency situations. An Intelligent Operation Centre aim at provide an integrated view of the city’s strategic and operational issues through effective information-gathering and processing and efficient dissemination of intelligent information. Governance and integrated intelligence includes comprehensive use and sharing of data across city departments, as well as improved transparency of activities.

Smart Environment. In the city of Johannesburg there have been installed households with smart meters to reduce electricity losses, increase revenue, and reduce energy consumption. The drastic emission reduction linked with the evolution in the transportation system impacts on the volumes and also different types of emissions, including Particulate Matter (PM) emissions which are one of the most noxious for the respiratory system, and will be reduced by the use of Euro IV and Euro V buses. The same line of reasoning goes with congestion reduction, which is a collateral – but crucial – effect of Rea Vaya.

Smart Mobility. Smart transport technology aims at addressing current and envisaged future problems affecting travellers and freight users with regard to traffic flow via the

Intelligent Traffic Management System. The Rea Vaya BRT project is a truly pioneering large scale, municipally run, mass transit system in Africa that has overcome strong opposition from the informal mini-bus and taxi operators by bringing them into the system. The Corridors of Freedom initiative strongly linked to the project is also one of its kind, as it creates priority lanes for the BRT system bordered with dense and green real estate development.

Smart Economy. The implementation of a brand new transportation system results in the intensive creation of employment in the city. A total of 51.000 jobs will be created by the beginning of 2016 (Joburg Annual Report, 2016); 75% of these jobs are dedicated to the reconversion of actors from the old transportation system and the 25% remaining will be mostly allocated to young people with a high level diploma (Joburg Annual Report, 2016). Secondly, as the outskirts of Johannesburg will be intensively connected to the centre, it will help inhabitants of neighbouring deprived areas in Gauteng benefit from the city’s steady economic growth (4.2% on average between 2000 and 2010 – Joburg Annual Report, 2016).

Smart People. Hundreds of youths are being inducted into the City of Jozi Educational Digital Interns (CoJedi). The programme aims to train 1 000 students each year to enable them to become employable or start SMMEs Once the initiative is rolling, their job will be to spread out into their communities to show people how to access contracts, facilities, government services and information on State tenders. The spread of public access to Internet is aimed at enhancing and promoting ICT literacy to all, including disadvantaged communities, via free access to digital information. Skills development is also driven via ICT Hub IT innovation and SMME incubation, with a focus on application development in collaboration with the Universities of Johannesburg and the Witwatersrand.

Smart Living. The Johannesburg Broadband Network (JBN), initiated in 2006, is designed to integrate the City’s telecommunications platforms, lower operational costs, increase

access, lower costs of communications for residents and allow access to areas which were previously not connected because they had no fibre network. The 990km of fibre-optic cables that have been rolled out provide the city with backhaul infrastructure capacity to internet service providers and mobile operators, removing the entry barrier for smaller providers and capital expenditure for larger ones. In the past, small businesses were not able to use cloud technology due to a lack of bandwidth.

The City of Johannesburg Housing Department has created a sustainable project of mixed-development housing, leveraging 6 500 housing opportunities into nearly 10 000 new housing opportunities. The result was to create a new way of thinking of housing of mixing targeted income groups in a township by offering fully subsidized, partially subsidized and bonded houses, which in turn would help take the budgets much further. This helps break down disparities in income, for by mixing communities.

Johannesburg as Smart Tourist Destination. Since the beginning of 2000s, Johannesburg has acknowledged the potential importance of tourism and cultural heritage for the local economy and, more especially, for the economic regeneration. During 2001-2002, the city implemented its first tourism development strategy (GJMC, 2001), identifying tourism as a fundamental opportunity for economic growth and job creation: the strategy recognized the MICE sector as the business sector in which the city could enjoy competitive advantage: this is why the "Joburg Convention Bureau" has been born and the city is the Africa first business destination. The development involved technology, transports, manufacturing. Gauteng has been positioned as the technology district of the city, becoming an Innovation hub for knowledge-based industries to transmit best practices from local and international expertise. Transports and logistics have been boosted through the Gautrain Rapid Rail Link and the development of the International Airport, one of the most strategic economic areas in Africa and of fundamental importance for business travellers. Nowadays the city is the largest transport hub for locals,

cross-borders and international travel in South Africa. The Newtown Cultural Precinct is a project to regenerate the economy of the inner-city, to make it becoming a cultural district and the "creative capital of South Africa" (Rogerson, 2003): it is a cluster of creative activities, entertainment and related industries for the promotion of cultural tourism, since the area is full of museums, theatres and heritage sites. Other two projects concerns the Cradle of Humankind, a World Heritage Site that comprises paleo-archaeological sites that has been potentiated with a world-class interpretation centre, a magnificent conference centre and several technology-based interactive activities. The Southern Africa Tourism Services Association (SATSA) the Gauteng Tourism Authority (GTA) and the Johannesburg Tourism are partnering to organize a trade show aimed at creating opportunities for emerging tourism businesses to tap into the inbound tourism market. The Joburg Tourism, a destination marketing organization is dedicated to promoting the city as a business, lifestyle, sport and leisure destination. The city attracts foreign students since it homes some of the top universities of the country, medical visitors since it is a centre of medical excellence, sport and shopping visitors and it is a filmmakers' attraction. The organisation promotes the project "Welcome to Jozi – Make a Visitor's Day Campaign": it aims at informing and educating Joburgers on how to be great Johannesburg ambassadors: promote the city, know where to take visitors and enhance their experience. It also illustrates how tourism impacts on each Johannesburg resident. The campaign highlights 101 ways Joburgers can make a visitor's day, and encourages them to learn the traditions and customs of visitors to the city.

Results. Johannesburg succeeds in positioning as a world-class African city of the future: it is a vibrant city, strengthened through its diversity to provide real quality of life, sustainability for its citizens, a resilient and adaptive society. During the last years, the city has reached important results: in 2009, it has been awarded as the Greenest Municipality. In 2013, the City of Johannesburg's Rea Vaya BRT project was the first Runner-up in the Innovative Service Delivery Institutions category for its waste

efficiency, pollution reduction and the creation of employment. In 2014, the city won the Cleanest Town Competition (CTC), initiated in 2001 with a primary focus on implementing the National Waste Management Strategy with the key elements of reducing, recycling and reusing waste materials. In 2013, the Johannesburg, Lilongwe Mentorship programme won the Guangzhou International Award for Urban Innovation for implementing financial and job creation programmes

Johannesburg won several awards at the International Awards for Liveable Communities (LivCom Awards) were launched in 1997 and are the world's only competition that focuses on environmental management and the creation of liveable communities.

Cross analysis and discussion

Cities all over the world face a fundamental challenge: keep the chance of combining competitiveness and sustainable development simultaneously. This main stream impacts urban quality and related aspects. The smartness represents the target toward a critical mass in term of key resources and organizing capacities. As shown by analysed parameters, smartness can be declined differently. All the smart city cases analysed in this paper have been deepened following the six dimensions of the Smart City Wheel by Cohen (2014) with respect to their impacts in the tourism context (Boes *et al.*, 2015, Buhalis, Amaranggana, 2015; Del Chiappa, Baggio, 2015), demonstrating good results in all of them, even if with different declinations.

Smart Cities are complex contexts characterized by several actors that interplay and territorial factors, all intertwined through technology development, which impacts on two important issues:

- 1) the systemic interactions and the co-creation among local actors and different organizations, in a destination management optic (Buonincontri, Micera, 2016);
- 2) the experiential vision, extremely relevant in marketing studies, since non-relational marketing, social marketing and web marketing are increasing the interactions among people and reducing the time between the phase of purchasing and the service delivery.

Comments, satisfaction or dissatisfaction are now instantaneous. These considerations regard, in case of smart cities, not only tourists but also and mainly residents. The basic idea is that, even if these are two distinctive market targets, smart city's structure, facilities and services can work for the overall benefit of "better living and better staying".

Moreover, based on the integration of hardware and software platform for information and services of the smart city, smart tourism can advantage of the full integration among different stakeholders towards innovative governance. In urban planning, smartness drives strategic directions. Governments consider smartness in their policies, strategies, and programs aiming at sustainable development, economic growth, and better quality of life (Micera *et al.*, 2013).

Another relevant aspect regards the impacts of smart city planning in terms of systemic tourist offer and destination brand image, a fundamental issue is the creation and maintenance of a positive urban image, able to show the internal characteristics of the city to the world. The more smart cities improve the quality of life for residents and tourists, favouring a systemic interaction among local stakeholders in developing co-produced offers, the more the destination brand image will improve. Therefore, the two first mentioned impacts influence the third one, closing a virtuous circle that nourishes continuously.

By applying smartness concept to address the analysis of the four cases (Table 4), the conceptual framework depicts the development of Smart Cities towards Smart Tourism Destinations through exploring tech applications in destination and addressing both opportunities and challenges. London represents a case of success followed by Singapore, Milan and Johannesburg and with ongoing results in terms of tourist flows. London and Singapore, in different aspects, realized the main objective of creating a smart tourist destination for themselves because of proven consistence of projects. The full consideration as a Smart City will be realized when destination management and smartness are in complete harmony. Milan must be

Table 4. *The examined cases and the relevant factors*

	Purpose	Challenges	Key Factors
Milan	Development of IT platforms to connect PA and citizens	Bottom-up processes not completely shared yet with citizens	Focus on projects after Expo and public-private co-working
London	Implementation of a strategy of sustainable development with a green mood	Possible mismatching among needs, economic development and environmental valorisation	Dynamicity and fast growing society
Singapore	Provide efficient services easy to access through technology, be responsive and ensure financial and environmental sustainability	Difficulties due to the great cultural variety of citizens, past bad reputation	Involvement of citizens and attraction of business tourism and SMEs
Johannesburg	Enhancement of life quality through the use of technology and the involvement of citizens and stakeholders	Possible project saturation also connected to the city life cycle	Experiencing in management complex projects and situations

Source: Our elaboration.

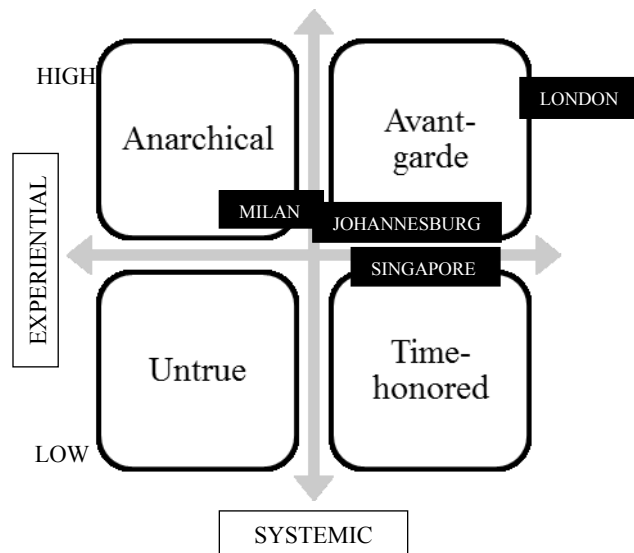


Figure 2. *Tourism and Smartness: is it a real smart city? (Our elaboration)*

considered on the long term even if it represents a good example of right project management. Johannesburg government is successfully trying to involve its multicultural local community in order to host visitors of different targets (business, medical, students and so on) in the better way, to boost the cultural mix and improve tourism flows from all over the world.

It is clear that all cases include peculiar aspects of smartness. Particularly, London has the wider spread of technology in the creation of

smartness pillars. On the contrary, for Milan formal and technological requisites towards smartness are not completely absorbed by community and governance. Moreover, Milan is the centre of ongoing big events like Expo. In these terms, projects are in progress and analysis can be limited. Singapore is more concentrated on the community green constitution in order to recover its own roots and distinguish from stereotypes of industrial area. Johannesburg is specializing in smart living and smart people activities in order to change its bad reputation due to the spread of

crime and violence that characterized the city in the past years and attract qualified business tourism.

In all cases, residents' involvement represents a step that is still in progress and that could be more pushed in terms of crowd-sourcing. Trying to evaluate the different propensity of each case to smart city issues and tools implementations, it is possible to position them within a matrix (Figure 2) where the two main variables are gradually expressed. When the systemic organization and the experiential approach are high, we are in front of the "avantgarde" smart cities, innovative both in theory and in practice. On the opposite, there are the "untrue" smart cities, that just formally declare to be or that they wish to be. The "time-honored" ones have a good systemic approach but have not innovated in experiential terms, thus using technology more in the fruition than in the marketing phase. Finally, the "anarchical" are innovative in marketing terms but still do not present a systemic consolidated structure.

Conclusions and future perspectives

Many cities are candidates to become smart cities today. The term smart, sometimes abused, represents an evolution of the future city concept, according to which the technology must be at the service of citizens for a better quality of life and a more sustainable environment. The focus shifts to the needs of people, management of resources and responsible development (Micera *et al.*, 2013). In this perspective, even if the literature on the topic is still fragmented, we tried to systematize some concepts aimed at verifying what really a smart city is and how a city can decide to embrace this approach. We aim at conceptualization of smart city exploring a variety of conceptual dimensions of smartness and their impact in the tourism context. From a theoretical point of view, we provide methods and models to use in the study of tourist smart city. This methodology can be applied to any case of smart city. Of course, in our research, we concentrated on four cases about which we had the chance of meeting focal actors and this was very helpful. One topic that remains left and will be issue of a successive work is the role of the governing actor (now just hinted at in the "destination management" variable), its

main functions and its capacity of developing appropriate strategies in smart cities logics. The defined classification systems could be further developed, extended and validated in order to provide a more holistic view of smart tourism. However, the topic deserves further studies in a multidisciplinary optic, which reveals extremely challenging.

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