

The Ideal City: Space and Time (from the Renaissance to Smart Cities)*

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ABSTRACT The phenomenon of Smart Cities finds an important conceptual parallel with the idea of the “perfect city” that characterized the imagination, art and philosophy of the European Renaissance. This similarity can help to identify some key points that are essential to understand the Smart Cities from a legal point of view. In particular, it allows us to highlight the need to put the “space” and “time” factors at the center of the discourse, in order to “give them back to citizens” as privileged objects of the city government.

1. Premise: smart cities, technology and post-technology

The notion of a smart city is normally connected to the idea of technological progress, and to the role played by the Internet in the development of urban services, considered from both a technical and conceptual point of view. This statement in itself is undoubtedly true: nobody today would question that the smart city constitutes a reality in which everything is interconnected in a “collective mind” whose synapses are the meshes of the world wide web¹.

At the same time, this idea is also partial. In fact – as it has often been noted – it may be simplistic to relate the notion of intelligent urbanism only to the technological aspect².

The smart city “uses” web and technology as development tools, but it cannot be reduced to the digital dimension alone, because it is rather the result of an evolution of thought, inspired by the concepts of rationalization,

responsibility, and optimization of the relation between individual and collective well-being³.

This may appear clearer if we consider that, in some particular cases, the intelligent urbanism takes the shape of a conceptual progress in conditions of apparent technological regression, if seen from a strictly material point of view. For example, we can think of the replacement of a traffic light system with a roundabout, or the encouragement of the use of the bicycle instead of the car⁴. In these cases, albeit simple, conceptual progress actually implies the renunciation of techniques or technologies that would appear superior⁵.

For these reasons, the task of those who govern the smart city is to understand where technology produces real innovation in terms of well-being and quality of life, and where

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¹ About the smart city as a collective mind: M. Batty, K.W. Axhausen, F. Giannotti, A. Pozdnoukhov, A. Bazzani, M. Wachowicz, G. Ouzounis, and Y. Portugali, *Smart cities of the future*, in *The European physical journal*, vol. 214, n.1, 2012, 491, where the authors observe that “the smart city would focus on the usual components that make the city function as a competitive entity as well as a social organism”. See also M. Vianello, *Costruire una città intelligente*, Rimini, Maggioli, 2014, 45.

² J.L. Piñar Mañas and M. Suárez Ojeda (eds.), *Smart Cities derecho y técnica para una ciudad más habitable*, Madrid, Reus, 2017, 8; B. Green, *The Smart Enough City Putting Technology in Its Place to Reclaim Our Urban Future*, Cambridge-London, The MIT Press, 2019, 18; L. Sartori, *Alla ricerca della smart citizenship*, in *Le istituzioni del federalismo*, n. 4, 2015, 931; F. Gaspari, *Il social housing nel nuovo diritto delle città*, in *Federalismi.it*, n. 21, 2018, 7; G. Dall’O, *Smart cities*, Bologna, Il Mulino, 2014, 23.

³ About the general concept of “Smart city”: D. Santiago Iglesias, *Ciudades inteligentes. Aproximación a un fenómeno en auge*, in *Questões Atuais de Direito Local*, n. 18, 2018, 85; F. Fracchia and P. Pantalone, *Smart city: condividere per innovare (e con il rischio di escludere?)*, in *Federalismi.it*, n. 22, 2015, 6. About the fusion of technological and non-technological aspects in the creation of smart cities, see the extensive reflections by G. Nesti, *Trasformazioni urbane*, Bari, Cacucci, 2018, 14. See also A. Venanzoni, *Smart cities e capitalismo di sorveglianza: una prospettiva costituzionale*, in *Forum di Quaderni costituzionali*, 2019.

⁴ A.M. Townsend, *Smart cities. Big data, civic hackers, and the quest for a new Utopia*, New York-London, W.W. Norton, 2014, 236. See also the definition formulated by S. Dustdar, S. Nasté and O. Šćekić, *Smart Cities. The Internet of Things, People and Systems*, Berlin, Springer, 2017, 3: “While there is no single accepted definition, the common contemporary understanding of a Smart City assumes a coherent urban development strategy developed and managed by city governments seeking to plan and align in the long term the management of the various city’s infrastructural assets and municipal services with the sole objective of improving the quality of life of citizens”.

⁵ M. Rocque, *Should smart cities be built on roundabouts? Tony Fish asks the question*, in *SmartCitiesWorld*, 15 June 2016, and G. Dall’O, *Smart cities*, 30.

this does not happen, in the pursuit of a condition in which collective well-being coincides with the good of individuals⁶.

In this sense, the smart city should be considered a post-digital phenomenon⁷, in which, starting from the technological background, we can find primarily a cultural evolution in the approach of people and governors, that implies new models and new paradigms about the relationship between the public sphere and the individual dimension.

It is a social but also a juridical change. In fact, the construction of smart cities involves a variety of very different disciplines, including first of all engineering, urban planning, information technology, network science, sociology, and, of course, law⁸.

The legal perspective is the one we will adopt below. That is, we will conduct our examination of the phenomenon in terms of law and, specifically, of administrative law, without excluding all interdisciplinary links and references to other topics, which must never be omitted.

We will observe how the horizon of the smart city implies a change in the lawmaker's approach, and how many institutions of administrative law need to be rethought, in particular those relating to the use of structures, spaces, and the management of public assets.

2. A historical parallel: Renaissance urbanism and smart cities

In the prevailing literature, the analysis of the phenomenon of smart cities is linked to the idea of a current urban "rebirth" that is now characterizing the first part of the twenty-first century⁹.

This is certainly true: to some extent it is possible to argue that the very concept of "smart city" resides in the acknowledgment of a new overall urban life dimension, against the background of technological development,

which consists in overcoming a crisis of the urban model that existed in the second half of the 20th Century¹⁰.

In fact, if in the second half of last century the main indicators of urban quality turned negative¹¹ (pollution, greenery, the overall quality of life)¹², the emergence of smart cities represents the overall key that has as its aim the inversion, in a positive sense, of all values¹³.

Certainly, this vision must not be reduced to a simplistic reading: smart cities represent a project, a nascent idea, which only great management skills can transform into something complete and effective. However, at least in the first experiences, there are the signs that lead the first commentators to speak of an urban "rebirth".

This idea has led some observers to speak not only about "rebirth", but about a technological "renaissance" of cities. The use of this term should not be considered a semantic artifice, but it leads to a juxtaposition between the current phenomenon of smart cities and what was, in the 16th and 17th century, the philosophical, artistic, architectural and political elaboration of the concept of the "ideal city" dominant in the European Renaissance¹⁴.

¹⁰ M. Batty, K.W. Axhausen, F. Giannotti, A. Pozdnoukhov, A. Bazzani, M. Wachowicz, G. Ouzounis, and Y. Portugali, *Smart cities of the future*, 481; E. Carloni, *Città intelligenti e agenda urbana: le città del futuro, il futuro delle città*, in *Munus*, n. 2, 2016, 235; C. Napoli, *La smart city tra ambizioni europee e lacune italiane: la sfida della sostenibilità urbana*, in *Le Regioni*, n. 2, 2019, 449; M. Keta, *Smart city, smart administration and sustainable development*, in *Romanian Economic and Business Review*, vol. 10, n. 3, 2015, 47, in particular where the Author says that "20 years ago it was believed that globalisation would bring the end of the city as a concept".

¹¹ A. Aurigi, *Making the digital city*, London, Routledge, 2016.

¹² The moment in which there was the apex of the environmental crisis is often placed by scholars in 1997, the year of the signing of the Kyoto Protocol on global warming, on December 11. See G. Dall'O, *Smart cities*, 13.

¹³ C. Harrison and I. A. Donnelly, *A theory of smart cities*, in *Proceedings of the 55th Annual Meeting of the ISSS*, 2011, 3.

¹⁴ S.O. Mourlille Boulanger, *Smart city: utopia or reality? understanding the evolution to understand the transformation*, in *FAM Magazine del Festival dell'Architettura*, n. 33, July-September 2015, 30. A. Granelli, *La città che produce. Per una via italiana alle smart cities*, in W. Tortorella (ed.), *Città intelligenti*, Rimini, Maggioli, 2013, 86; R. Scarfato, *Smart landscape: così il concetto esteso di smart city approda anche nel piano triennale Agid*, in *Agendadigitale.eu*, 17 April 2019; F. Cugurullo, *The origin of the Smart City*

⁶ About the pursuit of collective well-being in the smart city, see C. Lin, G. Zhao, C. Yu, and Y. J. Wu, *Smart City Development and Residents' Well-Being*, in *Sustainability*, vol. 11, n. 3, 2019, 676.

⁷ J. Maleszyk, *Rethinking the Smart City: Interventions for a Post-Digital Age*, thesis presented to the University of Waterloo, Waterloo (Canada), 2018.

⁸ J. Valero Torrijos, *Ciudades inteligentes y datos abiertos: implicaciones jurídicas para la protección de los datos de carácter personal*, in *Le istituzioni del federalismo*, n. 4, 2015, 1035.

⁹ J.F. McDonald, *Urban America. Growth, crisis and rebirth*, London-New York, Routledge, 2008.

We refer to the extensive pictorial, literary and philosophical phenomenon that, especially between 1500 and 1600, having its roots in the classical elaboration of Plato and Hippodamus of Miletus, produced the descriptive canons of the “perfect city”. Moreover, as is well known, it is not a question of purely aesthetic canons (although obviously this element is not absent), but also and above all of rules linked to the rationalization of urban reality according to the maximum level of well-being of its citizens.

It is also important to observe (as we will see in more detail below) that the rules and canons of the ideal Renaissance urbanism were not only abstract philosophical ideas, but also translated into the substance of the urban centers, to the point that in large part (at least for the architectural aspect) we can still see its effect today in the European historic centers.

Therefore, we believe that the parallelism between the ancient idea of the perfect city and the new idea of the smart city constitutes an important exercise in awareness to understand the present through the similarity with the past¹⁵.

Then, in tracing this synopsis, we will draw on some of the main works dedicated to the ideal city in order to find elements that constitute keys to read the present. Among these works, in particular, are Thomas More’s *Utopia* of 1516 and the *City of the Sun* written by Tommaso Campanella in 1602.

3. The ideal city of the Renaissance, the rationalization of space and time

The element on which we will focus the concept of the ideal city – and on which the parallelism with the smart city can be founded – basically concerns a recurring idea in the Renaissance elaboration: the fact that the city, in order to be functional to the citizen, must rationalize in the best way possible the use of space and time, as if both jointly represent the manifestation of an energy that must not be

imaginary: from the dawn of modernity to the eclipse of reason, in C. Lindner and M. Meissner (eds.), *The Routledge Companion to Urban Imaginaries*, London, Routledge, 2019.

¹⁵ A. Picon, *Smart cities: a spatialised intelligence*, Oboken, NJ, Wiley, 2015, 79, in particular where the Author says: “I suggested in 1998 that the cyborg could represent for the city of today – a city that is both ever more spread out and suffused by digital networks – the equivalent of what the figure of ideal man represented for the Renaissance city”.

lost or dissipated.

With reference to the rationalization of space, the idea that pervaded the Renaissance imagination is that of a perfect geometric and symmetrical distribution of urban reality, which in turn has two overlapping purposes, one aesthetic and the other practical.

The aesthetic purpose is linked to the canons of beauty and it is (intuitively) aimed at the enjoyment of the spaces by the citizen. This idea, as it is known, is represented in a multiplicity of paintings inspired by the same view of a majestic and symmetrical square, entitled “The ideal city”, first of all the anonymous painting often attributed to Bartolomeo Corradini, also known as Fra’ Carnevale (by others to Piero della Francesca), housed in Urbino.

The practical purpose is instead aimed at a concept of full rationality in making the spatial element functional for the enjoyment of its citizens, optimizing its use and minimizing travels. The coexistence of these purposes is present in the canons of Renaissance architecture, which start from the work of Leon Battista Alberti, in particular from *De re aedificatoria* written in several editions starting in 1450. In fact, he wrote in the opening words:

“Many and varied arts, which contribute to making our life happy, were investigated by our ancestors with great accuracy and commitment, and handed down to us. (...) so that if someone were to find one, and find oneself unable to do without it in any way, and at the same time to reconcile practical convenience with pleasantness and decorum, to my mind, into this category architecture should be included”¹⁶.

These studies concern both the shape of individual buildings and the urban shape as a whole, as is specifically identified in the studies of Francesco Di Giorgio Martini, in particular in the *Treatise on civil and military architecture*, starting from his writings in 1470, to which he dedicates book III to the

¹⁶ L.B. Alberti, *De re aedificatoria*, 1485, prologue. The original text is: “Multas et varias artes, quae ad vitam bene beateque agendam faciunt, summa industria et diligentia conquisitas nobis maiores nostri tradiderunt. (...) Si tandem comperias ullam, quae, cum huiusmodi sit, ut ea carere nullo pacto possis, tum et de se utilitatem voluptati dignitatique coniunctam praestet, meo iudicio ab earum numero excludendam esse non duces architecturam”.

shape of the cities, which had to be radial or checkerboard.

This theoretical construction finds its way into the city forms of humanistic Europe. In some cases, in smaller centers, the geometric expression takes on an extremely clear form¹⁷; even the big cities, however, show structures which, albeit in a more approximate way, refer to the rationality of the Renaissance¹⁸. We can think, for example, of the historical centers of the cities of Milan and Turin, which have in common the fact that they approximate geometric ideas, according to the two different models that we mentioned earlier: the city of Milan is built in concentric and sunburst circles, that of Turin is structured in the form of a grid of perpendicular lines.

Therefore, if the elements we have just observed lead to a rationalization - both theoretical and concrete - of the management of the "space" factor in order to make it functional for the best possible use, it is possible to observe how an analogous and parallel discourse can be identified in relation to management of the "time" element in the humanistic ideal city.

With reference to time, there is also a constant in Renaissance writings: the idea of pursuing the maximum rationalization is connected to the need for the city dweller to truly become owner of their day. On a practical level, the achievement of this goal is theorized through the minimization of the hours dedicated to work, and the complementary maximization of the time dedicated to leisure and pleasure.

The treatises and philosophical works on the ideal city contain several passages in which this concept is expressed. Thomas More, in *Utopia*, in 1516, affirms that it is right for everyone to work, but not for too long:

"Let no one be idle, but exercise his art with care. But not from morning all time until evening, which is extreme misery, and it is used in every country, except among the inhabitants of Utopia. They, of twenty-four hours between day and night, assign six to work (...). The time which advances between

the works, the sleep and the dinner, everyone dispenses it in his own way"¹⁹.

In a very similar way, Tommaso Campanella in the *City of the Sun*, in 1602, expresses the same concept, further reducing the time dedicated to work to just four hours a day:

"But among them [the inhabitants of the City of the Sun], dividing the work all and the arts and toil, is possible to toil only four hours a day for one; and all the rest is learning by playing, debating, reading, teaching, walking, and always with joy"²⁰.

As you can see, the ideal city is the one that minimizes the working time so that it is dedicated to playful, creative and pleasant activities, according to a concept later taken up by Henri Lefebvre when in his essay *Right to the city*, written in 1968, he states that "The human being has the need to accumulate energies and to spend them, even waste them in play"²¹.

Therefore, overall, the discourse relating to the rationalization of space and time must be seen in a joint and unitary perspective. In this way, what emerges is the idea of a city that

¹⁹ T. More, *Utopia*, Book II, 1516. The original text is taken from the edition printed in London by B. Alsop & T. Fawcet, and are to be sold by Wil Sheares, 1639, 109: "That no man sit idle: but that every one apply his owne craft with earnest diligence. And yet for all that, not to be wearied from earely in the morning, too late in the evening, with continuall worke, like labouring and toylng Beasts. For this is worse then the miserable and wretched condition of bondmen. Which, neverthelesse is almost every where the life of workmen and artificers, saving in Vtopia. For they dividing the day and the night into twenty foure just houres, appoint and assigne only 6 of those hours to worke (...). All the voide time, that is betweene the houres of worke, sleepe, and meate, that they be suffered to bestow every man as he liketh best himselfe".

²⁰ T. Campanella, *The city of the sun*, 1602, §505. The original text is: "Ma tra loro, partendosi l'offizi a tutti e le arti e fatiche, non tocca faticar quattro ore il giorno per uno; si ben tutto il resto è imparare giocando, disputando, leggendo, insegnando, camminando, e sempre con gaudio".

²¹ H. Lefebvre, *Right to the city*, in *Writing on cities*, selected, translated and introduced by E. Kofman and E. Lebas, Oxford-Malden, Blackwell Publishers, 1996, 147. A similar concept is expressed by B. Russell, *In praise of idleness and other essays*, London, Allen & Unwin, 1935, where he says: "I think that there is far too much work done in the world, that immense harm is caused by the belief that work is virtuous, and that what needs to be preached in modern industrial countries is quite different from what always has been preached".

¹⁷ F. Isman, *Andare per le città ideali*, Bologna, Il Mulino, 2016.

¹⁸ L.A. Cummings, *A recurring geometrical pattern in the early renaissance imagination*, in *Computers & Mathematics with Applications*, vol. 12, n. 3-4, Part 2, 1986, 981.

restores to the citizen the dimension of its personal development. In other words, the citizen becomes central, and everything is organized in such a way as to favour the creation of their perfect lifestyle, configuring what constitutes the “right to enjoy the city”.

These same coordinates, translated over time by about five centuries, can now constitute the conceptual pattern for thinking about what the smart city must be in 21st century.

In particular, this synopsis allows us to observe how, from a general perspective, all the elements that make up a smart city take place within two fundamental coordinates: urban space and time, in the joint construction of the right to enjoy the city. In other words, it is possible to observe, from a legal point of view, how the management of space and time constitute the seat of specific citizens’ rights and duties of the Administration in the new urban context.

Below we will analyse separately, in succession, first the “space” element and then the “time” dimension.

4. The smart city and the enhancement of space

If the legal basis of the smart city is the “right to the city”, or more properly the “right to enjoy the city”, this means that the management of smart cities is focused on new forms of administration of the “space” element.

The aspiration to manage the spatial-factor as rationally as possible, is the common denominator between the ideal Renaissance city and the smart city in 21st Century. The approach is apparently different, but conceptually very similar. Certainly, while in the sixteenth century urban rationalization was seen as a search for geometry and symmetry, in the twenty-first Century we think on a more abstract and conceptual level, also because, unlike then, today cities are not realities “to be built”, but are materially already present, not physically modifiable, but conceptually “overwritable”²².

Hence, the new forms of rationalization can be summarized in an ultimate goal, that is: “giving back spaces to citizens”²³.

²² E. Carloni and M. Vaquero Piñero, *Le città intelligenti e l'Europa. Tendenze di fondo e nuove strategie di sviluppo urbano*, in *Le istituzioni del federalismo*, n. 4, 2015, 876.

²³ K. Laaboudi, *Power of the People in Smart Cities*, in

However, this principle must be explained and framed in the general framework of administrative law, in order to show how it entails a substantial change in the paradigm of many of the logics of the legal approach.

Certainly, the idea of “giving spaces to citizens”, in the traditional sense, has always existed since the beginning of administrative law. The idea that property could be removed from the enjoyment of individuals and destined for works of interest to the community has always been recognized. This is the concept of “expropriation”, or “eminent domain”, or also “compulsory purchase”, which was already a discipline carried out in the twentieth century, and in some systems, already in the nineteenth century, and which today differs little from this initial system²⁴.

However, this idea, despite its validity, is not sufficient to understand the legal forms of property management in smart cities, the experience of which requires new categories, even from a strictly legal point of view.

The traditional management of public spaces through expropriation, in fact, implies a sacrifice of private property, connected to a unilateral power of the public body, that can take it away from the owner and can decide by authority its destination. So, we have the idea of giving spaces to citizens, but according to the “classical” scheme of a public power that establishes how to allocate and manage public space.

In other words, in the traditional system, the Public Administration, acting (legitimately) as an interpreter of the collective interest, can establish the forms of management of collective spaces, and this entails powers that allow it to assign spaces to the community as well as to remove them. In the “classic” scheme, citizens are aware that they can “receive” new spaces through public works but also of having to “give” their private spaces to the public body, which by

Aa.Vv., *White Paper e Madina 3.0 “Value Chain of Smart cities”*, November 2016, 7, where the Author talks about «Development Strategy on “The reconciliation of the citizens with their city”».

²⁴ C.T. McCormick, *The measure of compensation in eminent domain*, in *Minnesota Law Review*, vol. 17, n. 5, April 1933, 461; M. Taggart, *Expropriation, Public Purpose and the Constitution*, in C. Forsyth and I. Hare (eds.), *The Golden Metwand and the Crooked Cord: Essays in Honour of Sir William Wade QC*, Oxford (UK), Oxford University Press, 1998; G. Duni, *La riducibilità del risarcimento e lo Stato di diritto*, in *Il Foro amministrativo*, n. 1, 2000, 25.

motivating the pursuit of the general interest can “take away” (obviously with compensation) the property of the individual. Each citizen is therefore in a condition of potential “debt” of their property towards the public body, albeit for the pursuit of the well-being of the community

Here we do not intend to question the legitimacy of this scheme, that responds to rules that are fully in force today, but at the same time, we must observe how the smart city instead underlies substantially new paradigms in the management of collective space.

In the smart city, the traditional concept of property undergoes a significant change, and almost tends to reverse itself. The administration is no longer in “credit” with the citizen regarding the use of spaces, but it is in “debt” towards its inhabitants. The public body is not a powerful subject that takes away the property from some citizens to give it to others, but it must enhance private property without taking it away, in a horizontal perspective of shared administration, and on the other hand, above all, it must “give” its space to the community²⁵.

The “restitution” of spaces to citizens is a process that takes shape in many ways: opening and making accessible publicly owned places traditionally closed, in particular archives and libraries, redeveloping abandoned buildings, converting unused public areas into parks, and therefore, substantially, enhancing and handing over its existing assets, especially the underestimated ones²⁶.

The process, however, is not just that: delivering spaces does not only mean making them “usable” (i.e., allowing access to places that were previously closed), but also and above all means making them “transformable” by citizens.

This logic evidently implies a reversal of the consolidated approach of classical administrative law. The administration must not limit itself to build the spaces and deliver them to the citizens to “use them”, but must let the citizens themselves shape and create

the spaces they have available.

It is a process that is probably reductive to make it correspond with the concepts, partially different, of “horizontal subsidiarity”²⁷ or “participatory process”, as it represents an involvement of the population as an active subject at the deepest level²⁸.

From this point of view, a fundamental element of the smart city is the concept of “civic hacking”²⁹, that is, ensuring that citizens are co-creators of the structures and participate in their training, “manipulating” the urban spaces they are intended for in a collaborative dynamic that starts from the bottom³⁰.

The phenomenon of civic hacking can take place on an immaterial level, through the direct participation of citizens in the formation of public policies in conditions of open government, but it can also take place in a material sense, where citizens are induced to transform physical places³¹.

In this sense, an emblematic experience that recurs in all large smart cities is the phenomenon of tactical urbanism: that is the delivery of urban spaces to the direct

²⁷ About the concept of “horizontal subsidiarity”, see A. Maltoni, *The Principle of Subsidiarity in Italy: Its Meaning As “Horizontal” Principle and Its Recent Constitutional Recognition*, in *The International Journal of Not-for-Profit Law*, vol. 4, n. 4, June 2002, and J. Finnis, *Subsidiarity’s Roots and History: Some Observations*, in *The American Journal of Jurisprudence*, vol. 61, n. 1, June 2016, 133.

²⁸ About smart cities and subsidiarity, see G. Pavani, *From smart to sharing? Presente e futuro delle città (al di là delle etichette)*, in *Le istituzioni del federalismo*, 4, 2019, 857. Fracchia and P. Pantalone, *Smart city: condividere per innovare (e con il rischio di escludere?)*, 17. With reference to the potential of participation and the possibility to overcome the current schemes, see C. R. Sunstein, *Infotopia: How Many Minds Produce Knowledge*, Oxford (UF), Oxford University Press, 2006.

²⁹ Here we mean the words “hacking” and “hacker” not in the most recent meaning that links it to a crime, but in its original positive meaning, that is: expert people acting in a collaborative logic. About it, see P. Himanen, *The Hacker Ethic: A Radical Approach to the Philosophy of Business*, New York, Random House, 2001.

³⁰ M. de Lange and M. de Waal (eds.), *The hackable city*, New York, Springer, 2019; B. Murgante and G. Borruso, *Smart cities: un’analisi critica delle opportunità e dei rischi*, in *Geomedia*, n. 3, 2013, 8.

³¹ A.M. Townsend, *Smart cities. Big data, civic hackers, and the quest for a new Utopia*, 119, where the Author says: “Today, a nascent movement of civic hackers, artists, and entrepreneurs have begun to find their own uses, and their own designs, for smart-city technology. Not surprisingly, the Interactive Telecommunications Program has become an important center in this nascent revolution”.

²⁵ See J.-B. Auby, *Legal perspective: smart cities, data and digital law*, in *Field Actions Science Reports*, n. 16, 2017, 15, where the Author talks about «a particular form of public contract, the so-called “innovation partnership”».

²⁶ F. Gaspari, *Il social housing nel nuovo diritto delle città*, in *Federalismi.it*, n. 21, 2018, 27.

creativity of citizens' collectives who transform, paint and decorate them with low-cost tools – for example by painting the street surfaces – but with a very high visual impact in terms of shapes and colours³². The space is thus literally shaped by people collectively³³, almost to echo the Henri Lefebvre's words when he affirmed that «This city is itself "oeuvre"»³⁴.

An extreme and at the same time iconic model of tactical urbanism can be identified in the hypothesis in which actions and figures that in a traditional context would have been considered illegal and prosecuted, such as writers, are instead not only encouraged but identified as collaborators of urban development³⁵, and recruited by public bodies with the request to decorate and paint the walls of public places such as schools³⁶.

In this sense, it is possible to state that, in terms of space management, smart cities are “open source spaces”³⁷, which bring the same logic that animates the creation of free software back into the physical space. Smart cities are “open source” not only in the sense that they encourage and promote the use of free software, but in the sense that they are themselves, materially, spaces animated by

the spirit of a collaborative project, writable and rewritable by anyone³⁸.

5. The smart city and the rationalization of time

The discourse relating to the management of the resource “time” in smart cities is perhaps less examined, but no less relevant.

In a general view, the concept is very similar to what has been observed in relation to space: in this case too, the central idea is that of “giving back time” to citizens.

However, this side of the discourse, despite its simplicity, appears less intuitive, probably due to the fact that public bodies are less used to considering “time” as an object of administration in a similar way to space.

In reality, the idea that time is one of the coordinates of public action is well present in administrative law. It emerged, in particular, in the definition of procedural times; ultimately, the administrative procedure itself can be considered a time-object administration system in its precise phasing and deadlines.

Even more recent is the emergence, in the procedural rules of the various legal systems, of the awareness that time is an asset owned by citizens that should not be rightfully subtracted (just in the same way as space must not be expropriated without just cause)³⁹. This happens when the rules provide for compensation to the citizen for “damage from delay of the public administration”, in the circumstance in which the deadlines set by the rules are not respected⁴⁰.

This set of concepts, however, although already in existence, reaches its highest level of awareness in the smart city.

In particular, in the smart city there is a very strong emergence of the idea that time must be preserved as a citizen's asset not to be subtracted, and that the time that, in the past,

³² About the general phenomenon, see M. Lydon and A. Garcia, *Tactical urbanism. Short-term action for long-term change*, Washington, Island Press, 2015. See also A.M. Townsend, *Smart cities. Big data, civic hackers, and the quest for a new Utopia*, 306, where the Author says: “Smart technologies could accelerate the growing array of tactical urban interventions and pop-up installations—from food trucks and temporary parks to technology incubators and farmers' markets built inside shipping containers. Much like Cedric Price's Generator, the ability to redesign the city on the fly will challenge architects and urban designers to come up with more flexible structures”.

³³ K. Pogačar and A. Žižek, *Urban Hackathon – Alternative Information Based and Participatory Approach to Urban Development*, in *Procedia Engineering*, December 2016.

³⁴ H. Lefebvre, *Right to the city*, 66.

³⁵ M. Vianello, *Costruire una città intelligente*, Rimini, Maggioli, 2014, 91, where he says that “La realizzazione di una città smart è governata da processi concertativi e partecipativi che vedono come protagonisti soggetti diversi tra di loro, portatori di interessi fino ad ora concepiti e praticati in modo antagonista”, that is: “The creation of a smart city is governed by concertative and participatory processes that see different subjects as protagonists, bearers of interests so far conceived and practiced in an antagonistic way”.

³⁶ Aa.Vv., *Alla scoperta di Manu Invisible*, in www.playgroundmilanoleague.com.

³⁷ J. Fredericks, G. Amayo Caldwell, M. Foth and M. Tomitsch, *The City as Perpetual Beta: Fostering Systemic Urban Acupuncture*, in M. de Lange and M. de Waal (eds.), *The hackable city*, 67.

³⁸ K. Bradley, *Open-Source Urbanism: Creating, Multiplying and Managing Urban Commons*, in *Footprint Delft Architecture Theory Journal*, n. 16, spring 2015, 91; A. Guerrieri, *La città open source*, in *Civiltà di cantiere*, 29 August 2018; L. Sartori, *Alla ricerca della smart citizenship*, in *Le istituzioni del federalismo*, n. 4, 2015, 943.

³⁹ W. Kaufmann, G. Taggart and B. Bozeman, *Administrative Delay, Red Tape, and Organizational Performance in Public Performance & Management Review*, 2018, 5.

⁴⁰ G. Falcon. And F. Cortese, *Civil liability of the public administration. Jurisdiction and process*, in *Jus Publicum*, n. 1, 2011; A. Blasini, *Tempo e azione della P.A.: un nuovo paradigma del c.d. “danno da ritardo”*, in *Giornale di diritto amministrativo*, n. 4, 2020, 458.

the Administration has illegitimately subtracted from them should always be returned to the citizens.

Indeed, it is possible to assert that the public administration has “stolen” (or has “illegitimately expropriated”) the citizens’ time when it has offered a service that has required – as a “fee” for its fruition – a significant time commitment superior to the service itself, or in any case disproportionate, through unnecessary waiting, displacements, postponements, and in general a non-rational use of time.

Therefore, the “restitution” of time unnecessarily subtracted consists in offering services in which the reverse occurs, that is, the “boundary time” used by the citizen outside the enjoyment is zeroed (or minimized where technically it is not possible to zero it) of the service.

That is, undoubtedly, a recurring feature of the smart city, or another aspect, this time temporal, of the right to enjoy the city that characterizes this form of organization⁴¹.

There are two ways in which the smart city administration gives citizens back their time: a technological way and a non-technological way.

On the technological level, this is possible through online services and mobile apps that have the objective of minimizing or eliminating the “boundary” times with respect to the use of public services⁴².

A minimal but essential case is, for example, the application connected to the geolocation of public transport (which actually represents one of the minimum constants of any smart city)⁴³ which allows the individual to leave their home to go to the bus stop at the exact moment in which it passes, compressing or, sometimes, completely cancelling waiting times.

More generally, the rationalization of time does not only mean offering immaterial

services - also because a large part of the public service retains an irreducibly material dimension (think of the medical field) but, in relation to the services that must materially take place, offer, through connectivity, “frame-services” that reduce as much as possible the “grey zone” constituted by the time intervals preceding and following the use of the main service.

This macro-category of “frame-services” includes (in addition to the already illustrated example of the geolocation of public transport) the possibility of booking appointments in exact time slots, the possibility of pre-selecting elements of the service, the possibility of remote personal identification before physically going to the site, and similar situations.

All these services could be underestimated and classified as “ancillary services” or as “second degree services” with respect to the main ones to which they are functional. In truth, this is not the case: these services acquire in themselves a prominent role as constitutive elements of smart cities, precisely because they have the purpose of “giving back” time that would otherwise be “expropriated from the citizen”, i.e., subtracted from the right to enjoy the city.

From this point of view, the smart city experiences a real conceptual inversion – similar to the famous optical illusion in which figure and background are inverted – in which free time is central to time dedicated to non-recreational activities, as Henri Lefebvre wisely observed, in the work here already cited “The Right to the city”, in the passage in which he says: “The problem is to put an end to the separations of ‘daily life - leisure’ or ‘daily life - festivity’. It is to reconstitute the *fête* by changing daily life”⁴⁴.

For these reasons it is possible to observe that today this concept of “giving back time” constitutes a real legal duty of the administration, and not a mere abstract principle.

The administration must feel the legal obligation to invest, also on a financial level, in tools and applications that eliminate the additional time for public services.

Certainly, compared to what happens with space, awareness of this has yet to grow: in fact, while today it is clear that the Administration has a duty not to expropriate

⁴¹ H. Lefebvre, *Right to the city*, 158, where the Author says that “The *right to the city* cannot be conceived of as a simple visiting right or as a return to traditional cities. It can only be formulated as a transformed and renewed *right to urban life*”.

⁴² M. Caporale, *Dalle smart cities alla cittadinanza digitale*, in *Federalismi.it*, n. 2, 2020, 30.

⁴³ I. Arespachoga Maroto, *Tecnología de movilidad para gestionar la ciudad en beneficio del ciudadano*, in *Revista de Obras Públicas*, n. 3550, January 2014, 64; T. Quesnot and S. Roche, *Explorer les mobilités partagées à l’ère des Technologies de Géolocalisation*, in B. Guelton (ed.), *Médias situés et mobilités partagées*, Paris, Hermann, 2020, 55.

⁴⁴ H. Lefebvre, *Right to the city*, 168.

spaces illegitimately and to return the property that it has removed without justification, instead, the notion that it is equally illegitimate to steal time without justification is less consolidated at a legal level.

But if smart cities are built around the “right to enjoy the city”, then it is doubtful that this right must correspond to a duty of the administration, in both spatial and temporal dimensions.

6. A short conclusion: beyond technology

In conclusion, it is necessary to complete the discourse with a detail that we have mentioned above. We have observed that the “giving back time” can take place with technological or non-technological tools. But we talked above all about technological tools: geolocation, smartphone applications, online interactions, aimed at zeroing the boundary times of public services.

In some cases, however, time cannot be greatly reduced by digital tools. Some services have incompressible boundary times, for technical reasons. A very clear example is that of airports, where waiting times before flights (or the actual service) cannot be reduced below a certain threshold, and sometimes continue to be irretrievably long for physical and objective reasons, also because in similar contexts an excessive reduction of the “boundary times” would compromise the safety of the service.

In these cases, we can ask ourselves: is it therefore impossible to take up the concept of “giving back time”? Is the administration’s duty not to subtract disproportionate time intervals compared to those of effective use of the service?

The answer is that, even in these cases, the “giving back time” can take place, but in a non-technological way: the Public Administration can (better: must) insert opportunities for “enjoyment of the city” within the temporal spaces that cannot be covered (for example, waiting in airports and railway stations). This can be done by taking up the concept of “urban hacking”, that is to say by offering precisely in those periods of time opportunities for development and expression of creativity, or occasions of a playful and playful nature.

This is what happens, for example, when pianos are placed in airports and railway stations to be freely played by passing people (and listened to by the rest of the users, often

users of real impromptu micro-concerts), thus generating a sort of “temporal tactical urbanism”.

The new element is that even all this, in smart cities, must be perceived not as something accessory and secondary but as a primary legal duty of administrations. This too is a way to avoid an “illegitimate expropriation of time”, and therefore also any financial investment by administrations in this direction is not only justified, but a must.

This last aspect also demonstrates a key point: the smart city is based on an innovation that does not necessarily have to be technological, but which must instead be an innovation of concepts and ideas.

This concept has been expressed by Michel Foucault in 1982 in his essay “Space, knowledge and power” when he wrote: “A very narrow meaning is given to «technology»: one thinks of hard technology, the technology of wood, of fire, of electricity. Whereas government is also a function of technology: the government of individuals, the government of souls, the government of children, and so on”⁴⁵.

For this reason, the most iconic symbol of smart cities is probably not a smartphone, but the boarding area of a busy airport with a grand piano at its center.

⁴⁵ M. Foucault, *Space knowledge and power* (interview by P. Rabinov), in *Skyline*, March 1982, 20.