

# 'SMART' IN BETWEEN PEOPLE AND THE CITY

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## Abstract:

The present paper intends to identify the current meanings of 'smart' in the concepts 'smart cities' and 'smart people' by debating on place identity conjoined with individual and community identity, as currently discussed in specialized literature, in some media outlets and in some official documents of specialized institutions. The study debates on the dichotomy 'technology and/ or the human factor' starting from a general discussion on technological determinism vs. the role of the social context, on possible new identities associated with the contemporary digimodernist society, and it ends with a discussion on the role of human-centered approaches in innovation processes that contribute to the construction of smart cities, which is the case of Cluj-Napoca, Romania.

**Keywords:** smart cities, smart people, community and place identity, human centeredness.

## Full Text:

### 1. Introduction

In July 2019, Forbes published an article titled 'Smart Cities Are Built by Smart People, Not Smart Things', signed by Remington Tonar and Ellis Talton, two experts in urban infrastructure and innovation. As announced in the motto of the text belonging to Michael Batty, professor of planning at University College London ('If the essence of urban development is individual action, then a city can only be as smart as its citizens') the article insists on the idea that the key role in building a smart city belongs to the people of that city to the detriment of Information and Communication Technologies and the Internet of Things. Evidently, it is common knowledge that the two components (ICT plus IoT and the citizens) are interdependent and they do not exclude each other, but this text brings forth a set of arguments for the idea that there is the urge to accelerate urban progress mostly by means of digital and data technology and the consequence of this is that the human factor comes a poor second, or, even worse, as the authors outline: 'the most important element of any city is being forgotten: citizens themselves' (Tonar and Talton, 2019).

The Cambridge Dictionary defines 'smart' as anything that 'uses computers to make it work so that it is able to act in an independent way'. Hence, placed next to anything that is 'computer-assisted', 'smart' has become an abundant adjective today. The opinion piece mentioned above completes this dictionary definition by elaborating on the characteristics of 'smart cities' in connection to emerging technologies, on the one hand: a smart city is 'home as a 'machine for living'' (quoted from Le Corbusier); they are 'economically vibrant cities' and 'hyperconnected, ubiquitous networks'; smart cities use big data and artificial intelligence in order to 'augment' infrastructure; they do 'more with less'; they use smart devices and automated systems in order to enhance 'efficiency, connectedness and convenience', they have 'smarter roadways, railways and utilities' and so on (Tonar and Talton, 2019). Conversely, at the same time and for the sake of emphasizing the shortcomings of such a single-directed project of development of any smart city mostly by means of smart technologies, the article uses a set of solid references in order to highlight the need for 'a more innovative, educated, talented, resilient and empowered citizenry' because such

an infrastructure can 'facilitate value creation' but the protagonists in this equation are the people, say Tonar and Talton (2019). The line of reasoning at this point in the article focuses on the idea of citizen participation as 'citizen cocreation' where people have to 'capitalize on the efficiencies and opportunities they [technologies] create'; they are 'thoughtful citizens' able to 'correctly interpret data', able to know when 'to rely on automated systems and when to reassert their agency', and to 'intelligently engage with each other and their environment'; education, not only by means of STEM subjects but also by means of the humanities and the arts, is seen as the 'driver of urban growth'. All in all, Tonar and Talton stress on the idea of 'the bottom up power of empowered and engaged citizens and enterprises co-creating the city' (2019).

Consequently, who are the people living in smart cities? And, if they are not as 'smart' as the smart technologies and the whole hard infrastructure implemented by the city leaders, what is to be done in this sense? The problem of identity construction at both individual and community level has been discussed for several decades now, and it is an open-ended issue in today's societies all over the world. Moreover, place identity has suffered the same dynamic process, and it has been mostly related to urban planning, urban design and architecture. The way in which place identity is defined interferes with the process of self-conceptualization due to the interconnectedness of meanings, significances and representations exchanged, shared or rejected by the dwellers of a certain place in a certain cultural context. Once more: if smart cities are a reality today, what about the identity of the people living in smart cities and if 'smart people' is the answer, what is the meaning of 'smart' here?

## 2. Study design

The study debates on the dichotomy 'technology and/or the human factor' starting from a general discussion on technological determinism vs. the role of the social context, then on possible new 'smart' identities associated with the contemporary digimodernist society, and it ends with a discussion of the role of human-centered approaches in innovation processes that contribute to the building of smart cities, which is the case of Cluj-Napoca, Romania.

The basic research questions are: (1) what is the impact of digitalization on the newly emerging community and place identities?; (2) what does 'smart' mean in a smart city and in a smart community?, and (3) how are these concepts defined in the case of Cluj-Napoca, Romania?

In order to answer these questions and to identify the new 'meanings' of city identity conjoined with individual and community identity, the present study focuses on: (1) specialized literature that provides the starting point and the direction of the study itself; (2) some media outlets; and (3) some official documents of specialized institutions.

The type of holistic inquiry proposed in the present work is the single instrumental case study (Cluj-Napoca as smart city and community) because the intention is to contribute to some general understanding of the concept of 'smart cities and smart people' by using the particular case of Cluj-Napoca, which could identify some good practices for innovation that entail citizen involvement and participation by means of ICT and IoT.

## 3. Identity construction, technological determinism and the social context

Identity is who one is and who we are is an ongoing constructive process that takes time, it literally needs space, either physical or virtual, and it must accommodate a cultural context consisting not only of spatial and temporal elements but also of complex social, historical, economic, political, technological factors. Identity conjoins sameness with difference, idem with ipse, common collective characteristics with personal, unique and authentic features. Thus, identity is both an individual project and also a socially produced construction, emerging in interaction, in communication, in-between 'I' and 'the Other(s)'.

Evidently, each cultural or historical epoch generated a type of cultural and social identity that replicated the ideological commonalities of the time, visible in art forms, philosophy, the sciences: from the Greco-Roman one, to the Renaissance and Humanism, then Baroque and Rococo, Neoclassicism, the Enlightenment, Romanticism, Realism, Modernism, Postmodernism and Post-

Postmodernism or Post-Cyborgism, to succinctly name the grand ones. To refer to the last but one cultural movement, Postmodernism (although many still consider it alive and contemporary): it generated a type of 'subject' to construct himself/ herself as a multiple, plural, fragmented, split, decentered, dislocated, marginal, minor, dissipated, indeterminate, impermanent, undecidable, ambiguous or schizoid identity. It came into being in the second half of the 20th century along with accelerated change in all fields, globalization, trans-national flows, increased cultural and social interferences, all resulting in existential insecurity, when 'our social maps no longer fit our social landscapes' (Jenkins, 1996, p. 9). A multiple or plural cultural context generates more fluid identities. Moreover, with the explosion of IT and communication systems in the last decades of our age, with the Fourth Industrial Revolution and the digital technologies, the world has radically changed in matters of communication first, hence, of social interaction and identity construction, impacting almost all domains. It is commonly known that we are living in the early stages of a new kind of era when technology, media, audiences have a totally different word to say about what is going on in the world than it used to have some (not very many) years ago. This means technological or media determinism, phrased by Marshall McLuhan as follows: 'In a culture like ours, long accustomed to splitting and dividing all things as a means of control, it is sometimes a bit of a shock to be reminded that, in operational and practical fact, the medium is the message. This is merely to say that the personal and social consequences of any medium--that is, of any extension of ourselves--result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology [...] it is the medium that shapes and controls the scale and form of human association and action (emphasis added) (McLuhan, 2011, pp. 19-20).

Opposed to this idea that media or technologies are the message, i.e. the cause and core of modernization and development, we have the British cultural and social analyst Raymond Williams (2004) who sees the phenomenon in a different way. He believes that, regardless of any internal determinant (print or telegraphy or television or the Internet), innovation and change cannot take place autonomously only because of these media and out of a certain social and economic context. This because technologies enter a world based on social relations and the implementation, use and evolution of technological innovation requires interaction among individuals, institutions, corporations, etc., i.e. social power. As Williams formulates it: 'Determination is a real social process, but never (as in some theological and some Marxist versions) a wholly controlling, wholly predicting set of causes. On the contrary, the reality of determination is the setting of limits and the exertion of pressures, within which variable social practices are profoundly affected but never necessarily controlled. We have to think of determination not as a single force, or a single abstraction of forces, but as a process in which real determining factors--the distribution of power or of capital, social and physical inheritance, relations of scale and size between groups--set limits and exert pressures, but neither wholly control nor wholly predict the outcome of complex activity within or at these limits, and under or against these pressures' (Williams, 2004, p. 133). In his study (*A 'Technological Idiot'? Raymond Williams and Communications Technology*), Des Freedman finds four statements of Williams that challenge the contemporary familiar statement that 'the Internet has changed our world', all summed up in the idea that 'social relations set limits on the development of the Internet as a democratic medium' (Freedman, 2002, p. 425). He elaborates on: (1) 'technology is always, in a full sense, social'; (2) 'The moment of any technology is a moment of choice'; (3) 'The sense of some new technology as inevitable or unstoppable is a product of the overt and covert marketing of the relevant interests', and (4) "Unforeseen uses and unforeseen effects may qualify the 'original intention' of those developing the technology' (Freedman, 2002, pp. 428, 430, 432-433).

We think 'through, with, and alongside media', states a hallmark book signed by Katherine Hayles (2012, p. 1). Her text is built on the work of M. McLuhan, F. Kittler, L. Manovich and M. Hansen, and it explains how digital media 'can be used fruitfully to redirect and reinvigorate humanistic inquiry', as Hayles mentions in the first chapter (2012, p. 18). At the same time, she finds that these 'media upheavals' are not able to 'specify the direction or human value of the changes' because 'people --not technologies in themselves--will decide through action or inaction whether an intervention such as this will be successful' (Hayles, 2012, p. 18). Hayles' phrase 'contemporary technogenesis' reads like the idea that humans and technologies are co-creating change.

Correspondingly, considering the dichotomic theories presented so far, the present study tries to identify the social factors and circumstances that facilitate innovation in 'smart cities' along with digital technologies, and to elaborate on the current possible significances of social change correlated with individual and place identity.

#### 4. Digimodernism, identity and the return of the human-centered approach

One fundamental book constructed around the new cultural paradigm characterizing the early decades of the 21st century is Alan Kirby's 'Digimodernism. How New Technologies Dismantle the Postmodern and Reconfigure Our Culture' (2009). The thesis of the book is that 'digital modernism' appeared as generated by the 'computerization of texts', which resulted in new forms of textuality characterized by 'onwardness, haphazardness, evanescence, and anonymous, social and multiple authorship' but also by 'infantilism, earnestness, endlessness, and apparent reality' (Kirby, 2009, p. 1). Kirby refuses to name this new era of ours 'digimodernity'. He does not find that what the digital turn generated is 'a totally new phase of history' but rather just 'another stage within modernity' (Kirby, 2009, pp. 2-3). Moreover, Chapter 7 in the book discusses the possibility of a 'digimodernist society'. Despite calling it 'an entity' with an unclear status, Kirby identifies a series of traits that fall under the type of culture characterizing our era. Among them: contempt and self-pity for anything that belongs to the past or a sort of 'blank unawareness of previous time' (Kirby, 2009, p. 226). Added to this we have 'the experiential loss of the future' when, in teaching for example, says Kirby, what matters is what is 'relevant today for life' regardless of any prospects for any kind of future. In addition, there is also 'our aggression toward the future', a phrase correlated with money, loans, credits and consumerism, but also with childhood suffering, divorce and separation (Kirby, 2009, pp. 226-227).

In bold phrasing, Kirby's statement about digimodernist societies is that they 'steal the future and torment its citizens' (2009, p. 227), and to demonstrate it, he debates on three ideas. First, the problem of the 'self' is addressed when talking about the 'invention of autism'. With respect for those clinically diagnosed with this new syndrome and for the idea that we 'all have some autistic traits' (2009, p. 230), the author connects it, on the one hand, with IT and the private virtual worlds or 'reality-systems' that put a stop to social interaction, which results in lack of socialization, lack of empathy and poor language acquisition or noncommunication (Kirby, 2009, p. 230). On the other hand, Kirby explains autism as 'the excluded or failed other of the contemporary hegemonic' (emphasis added) enumerating nine possible situations that 'autism' reacts against: (1) overpopulation and excessive interference versus the need for solitude, silence and freedom; (2) too much flexibility, multitasking, job insecurity, too much updating versus sameness, repetition and rigidity; (3) too much 'fetishization of gregariousness and bonding with others', too much superficiality, too many hazy impressions versus authentic, depth-knowledge and true facts; (4) autism's 'extreme male brain' against the postfeminist view on the 'natural', therefore misogynistic man; (5) too much 'Latin' emotion versus the 'Victorian remoteness', 'high-mindedness'; (6) generational crisis and the view of the syndrome as 'a child's illness'; (7) 'nothing remains outside', all rebellions are accepted by the system (emo, rap, etc.) versus the stubborn exclusion as behavioral alienation; (8) multiculturalism and acceptance of all and of all views versus the preference for 'truth, objectivity and reason'; (9) the 'antiscientific drift' and 'the new social orthodoxy of instrumentalist learning' seen in the consumerist contempt for 'nonutilitarian information' versus the option for 'exhaustive knowledge', facts, 'rich and grammatically correct' language, 'rationality, truth, and rigor' as forms of rejection of 'the subintellectual barbarism' characterizing our age (Kirby, 2009, pp. 231-233).

Alan Kirby's second focus in describing a type of 'digimodernist society' comes under the title 'The Return of the Poisonous Grand Narrative' (J.F. Lyotard's phrase for Christianity, Marxism, Liberalism, etc.). This part is meant to elaborate on what happens to thought and thinking in our digital era, namely: that 'idea is dead', or that religion, as grand narrative, is 'pure toxicity' when resulting in violence, destruction, oppression, silencing and fear, as in 9/11, says Kirby (2009, pp. 236-237), or as in Gibson's 'The Passion of the Christ'. Another example is the 'poisonous' consumerism in 'all human life' seen as 'grand-narrative' imperialism, spread everywhere (life, home, food and eating, relationships, life-style, etc.), starting from the example of higher education,

which is meant to be for all, which is why it is a money-driven system that departs from knowledge and truth towards 'the whims of adolescents' (Kirby, 2009, p. 239).

The third trait of this digimodernist society in Kirby's view is the 'death of competence' understood as 'a shift in social values' in public fields, in personal fields and in technically trained career professionals, identified in six areas: (1) education ('antitransformative and postcompetence schooling'); (2) politics (as deprofessionalized); (3) consumerism, making any judgment and evaluation plausible regardless of knowledge and competence; (4) a new 'elite' made up of those who know what is 'good', i.e. everybody, which literally means anyone who is 'self-pointed and unqualified', a 'mass of inadequate, shallow, and unscientific pseudoauthority', coming through TV, periodicals, books, etc.; (5) 'illiteracy, innumeracy and inarticulacy' in the 'cool, democratic, anti-elitist and young' as the naive fooled by any 'democratic government' which is 'self-serving' and it concentrates on economic growth for (re)election purposes; (6) 'personal incompetence' coming along with 'technological sophistication' in 'infantilized adults' unable to listen and concentrate, to cook, to manage finances, etc. (Kirby, 2009, pp. 241-245).

All in all, Alan Kirby asks a fundamental question at the end of his book, and so does this present study, modestly: Whose is this digimodernism? Furthermore: what kind of identity does an individual or a community build in such a 'digimodernist society'?

In September 2018, The World Economic Forum as 'the International Organization for Public-Private Cooperation' provides an 'Insight Report' on Identity in a Digital World. A New Chapter in the Social Contract (WEF, 2018). The text brings together the findings of WEF's 2018 Annual Meeting at Davos, and the contributors belong to diverse public and private sectors. The report centers on the facets of 'digital identity' understood as online identity or as one's online avatar, summing up the whole information about a person as well as one's profile and history of online actions. The matters related to this type of digital identity as defined by WEF's Report do not make the focus of the present study which instead concentrates on determining a type of individual identity that fuses with our contemporary 'digimodernist society' (Kirby's definition), more specifically, a type of individual and/or community identity attributable to 'smart cities'. Nevertheless, the common point of both this study and WEF is that along with the major innovative and transformative power of digitalization in almost all sectors of human life, the core problem is the need for the return of the human-centered approaches in solving the problems generated by such change. Derek O'Halloran mentions in the introduction of the report that this publication 'takes stock of where we are today and identifies gaps in coordination across sectors and stakeholders', which is 'urgent' because 'deeper cooperation' is needed in order 'to shape user-centric identities' or else 'we risk aggravating or creating digital devices, as well as failing to provide citizens and consumers with the opportunities that the Fourth Industrial Revolution presents' (WEF, 2018, p. 4).

All online data about a person, from financial matters, to legal, medical or commercial ones, come to be used by other individuals or institutions in order to 'make inferences that may inform judgements or decisions' (WEF, 2018, p. 9). The result is a matrix of identity systems (centralized, federated and decentralized) that have to collaborate well in order to create value for all the parties involved but especially for the individual's well-being in economic, political and social matters. WEF's report mentions that more and more digital services mean a gradual loss of control of how people 'are represented digitally in their interactions with institutions' and this is 'a challenge to the social contracts that govern the relationships between individuals and institutions in a digital world'; this is why 'a transformation that puts value on the individual at the center' is necessary, states WEF (2018, p. 5). A chart titled 'Identity in everyday life' in this report gathers ten compounding elements around the concept of 'digital identity' in connection to people, entities, things and devices, and these are: healthcare, financial services, food and sustainability, travel and mobility, humanitarian response, e-commerce, social platforms, e-government, telecommunications and smart cities (WEF, 2018, p. 10).

## 5. Smart cities and people. Practices in innovation: The case of Cluj-Napoca

There are numerous and diverse definitions of 'smart' cities. The amount of literature on the concept stays dynamic and complex and the perspectives are divergent, which is why the concept

remains open-ended. 'Smart Cities: Contradicting Definitions and Unclear Measures' signed by Cavada, Hunt and Rogers is a conference proceedings paper of World Sustainability Forum 2014 which demonstrates that there is no clear, coherent and objective definition of smart cities, that there is no 'set of standards' or a commonly-agreed 'semantic content' of 'smart cities', and that there is a 'disconnection with overall citizen interpretations and expectations of what the prefix 'Smart' actually means' (Cavada, Hunt and Rogers, 2014, pp. 1-2). The study identifies three major themes within which definitions of smart cities are found (ICT, resilience and sustainability, and innovation and business), and these are intermingled with further three categories or 'stakeholders in a Smart Cities Matrix (SCM)', namely: people, governance and companies. Among the conclusions reached here, there are the following: a smart city is able to 'respond in a smart and independent way to provide solutions to a range of city problems'; the 'aim' of smart cities is human existence; 'as a resilience framework or a business strategy, smart refers to the services, security and growth of citizens within urban developments'; 'people are the city'; because the citizens are the ones to provide data that can be used as an open source for innovation and the 'central part of the diagram' should belong to 'citizens and human value'(Cavada, Hunt and Rogers, 2014, pp. 10-11).

That the 'Internet of Things is the backbone' is what another study sustains. Courageously titled 'Everything You Wanted to Know about Smart Cities' and signed by Mohanty, Choppali and Kougianos (2016, p. 1) the study focuses on smart cities as a concept, and it also admits there is no 'consistent definition among practitioners and academia'; in simple terms, the authors see smart cities as the place in which inhabitants can benefit from more 'flexible, efficient and sustainable' services by means of new information and digital technologies. As mentioned at the very beginning of the text, IoT is the core element that unites all the key components of the smart city, specifically: smart infrastructure, smart building, smart transportation, smart energy, smart healthcare, smart technology, smart governance and smart citizens (Mohanty, Choppali and Kougianos, 2016, p. 1). Beside these components, smart cities also have: four attributes (sustainability, quality of life, urbanization, smartness), four themes (society, economy, environment and governance), and three infrastructure elements (physical, ICT and service) (see Figure 2 from Mohanty, Choppali and Kougianos, 2016, p. 2). A smart city is thus a larger system made up of all or only a part of these smaller systems that have to connect well, and to use all the resources in order to work efficiently for the well-being and the quality of life of all its citizens. Moreover, the authors conclude, despite all these common qualities, a smart city has 'a unique history' and 'a specific social and environmental context' which should be considered in any innovation processes (Mohanty, Choppali and Kougianos, 2016, p. 9).

An opposite perspective comes from a not very recent text which defines smart communities in connection with e-governance and social learning, published by Coe, Paquet and Roy in 2001; the text draws attention to 'a new smart community movement' that understands the necessity for a 'community-based model of governance' built on 'collective intelligence', the latter meaning more than geographical proximity and new information and communications technology or connected citizenry (Coe, Paquet and Roy, 2001, pp. 3-4). As the study defines it, a 'smart community' is any locus that has 'networked intelligence' and, most importantly, one that epitomizes collective intelligence and social learning; it means more than communities going online in order to connect services, governments, schools, health, businesses, etc., where 'more' means more than ICT, because ICT are not the *deus ex machina*, state the authors; this because 'the core transformational challenge' lies elsewhere, particularly in 'social learning through an effective use of collective intelligence' possible through governance structure (Coe, Paquet and Roy, 2001, p. 14). Therefore, the meanings of 'smart' here come from intersecting two components or signifiers: connectedness/ the 'digital' plus people/ the 'intelligent'. This is also the statement of a report delivered by The American Public Power Association published in 2018 and entitled 'Creating a Smart City Roadmap for Public Power Utilities'. The text states that technologies must address and respond to specific community needs and communities are by definition very diverse, which is why 'the holistic term "smart" should mean solving the citizens' 'unique problems' by means of specific technology. Moreover, the report underlines that technologies have always existed, and that there will always be 'newer technology, faster Internet speeds, more efficient transportation models, etc.', but the first step into making a city smart should be to 'identify the needs of the community' and

further on to design a 'roadmap' for 'public power utilities' (American Public Power Association, 2018, p. 6).

All the studies mentioned above in this part of the present study underline the importance of human centeredness which is not a new concept for it was mentioned by Mike Cooley in the 1980s when he spoke about 'human-centered systems' related to human-centered design as interactive systems that should aim at solving human problems by using human involvement, participation and co-creation in identifying, defining and implementing solutions, which, in simple terms, would mean putting people before machines (Cooley, 1996, p. 69). Participatory action research (PAR) is evidently correlated with such approaches, and it implies observing the context in which innovation emerges, observing the consequent occurring problems for the community; it also requires community studying and brainstorming, as well as accommodating technology in order to solve the identified problems, adding here the necessary community feedback in order to measure success. As Kemmis and McTaggart define it, PAR is distinguished from conventional research because it has three specific features: 'shared ownership of research projects, community-based analysis of social problems, and an orientation towards community action' (Kemmis and McTaggart, 2008, p. 273). Moreover, PAR involves 'a spiral of self-reflective cycles of the following: planning a change; acting and observing the process and consequences of the change; reflecting on these processes and consequences; replanning; acting and observing again; reflecting again, and so on.' (Kemmis and McTaggart, 2008, p. 276).

In what follows and in strict connection with the importance of human-centered approaches and PAR, the present study will concentrate on the case of Cluj-Napoca, Romania, which has been dubbed 'the Silicon Valley of Eastern Europe' for being a technology hub. Related to this, Forbes published an article in 2016, signed by Stephen McGrath, stating in the headline that 'Romania's Silicon Valley Has an Innovation Problem' because although the IT sector 'is booming' all over Romania and especially in Cluj (1), it lacks 'innovators and good product people'. This because these people only stick to what products do, they lack creative thinking but also lack 'access to funding'; there is also the lack of 'good marketeers', of 'business analysts with appropriate knowledge' and, added to this, is the economic issue. McGrath concludes that Romania is struggling to transition from outsourcing to innovation', and that labelling Cluj-Napoca as the 'Silicon Valley of Eastern Europe' is a perception 'far removed from reality' (McGrath, 2016). Emma Lee, a smart cities networking specialist, holds the contrary in Cities Digest, in an article that supports the idea of Cluj-Napoca as a smart city mentioning the five pillars identified here in order to 'assist in its transformation towards becoming a real smart city', namely 'transport and mobility, citizen engagement, energy, infrastructure and access to internet' (Lee, 2017). She mentions the 'My Cluj' app which facilitates citizens' interaction with the administration of the city, which literally means citizen empowerment, on the one hand, and active participation and co-creation, on the other hand, because 'My Cluj' app results in specific actions initiated both by citizens and city administrators who resolve most of the occurring issues. Smart Cities Council Europe (SCC Europe) also speaks about Cluj-Napoca as Romania's tech hub aiming at improving the quality of life for citizens in the five areas mentioned above, but it also mentions 'the boost of creativity' that the city is trying to give to the IT industry by creating the first industries cluster to work together with the universities in the city; added to this, there is the city's tourism, cultural attractions, connectivity and services, among which a smart parking system, electric busses, apps for public transport, for city tours, for city administration, for city resolution problems through 'My Cluj' app that connects citizens and officials. The article calls Cluj-Napoca a 'city of "smart citizens"' (SCC Europe, 2018).

Apart from these three views on the status of Cluj-Napoca as a 'smart city', [www.smart-cities.eu](http://www.smart-cities.eu) of TUWIEN, Vienna University of Technology, presents 'europeansmartcities 4.0 (2015)', a document that delivers the 'European Smart City Model' which profiles and benchmarks some medium-sized cities in Europe (with a number of citizens in between 300,000 and 1 million, cities that are listed in the Urban Audit Database, and that have a degree of availability of indicators of more than 80%). The members of TUWIEN team are Rudolf Giffinger, Hans Kramar, Gudrun Haindlmaier and Florian Strohmayer, belonging to the Department of Spatial Planning, who collaborate with private and public stakeholders and actors. The proposed 'smart city model' is meant to facilitate 'effective learning processes regarding urban innovation' in specific domains. There are 90 cities (indicators)

from 21 countries that are analyzed through this model which views '6 key fields of urban development, built on the 'smart' combination of endowments and activities of self-decisive, independent and aware citizens', the team states (Giffinger et al., 2019). The six key fields with their 27 subsequent domains are: (1) smart economy (innovative spirit, entrepreneurship, city image, productivity, labor market, international integration), (2) smart governance (political awareness, public and social services and efficient and transparent administration), (3) smart living (cultural and leisure facilities, health conditions, individual security, housing quality, education facilities, touristic attractiveness and social cohesion), (4) smart mobility (local transport system, international accessibility, ICT infrastructure and sustainability of the transport system), (5) smart environment (air quality, ecological awareness and sustainable resource management), and (6) smart people (education, lifelong learning, ethnic plurality and open-mindedness) (Giffinger et al., 2019). The benchmarking shows a representative city profile grid for each city with the results on the level of factors for the six key fields; Romania has two smart cities included, Cluj-Napoca and Timisoara.

The results for the city profile of Cluj-Napoca in 2015 show that the city as a 'smart' entity is slightly above the average in only two key components, smart governance and smart environment, and well below the average in the domain of smart economy. As for smart governance, the highest result is for public and social services, whereas for smart environment, the highest results are for air quality and ecological awareness; the smart economy field in Cluj-Napoca is below the average in all the six domains mentioned above; the field of 'smart mobility' is ranked above the average only in the domain of the local transport system (of the four domains); the 'smart living' key factor is above the average in three domains of the seven components, namely in individual security, social cohesion and education facilities, this last domain being the highest ranking domain from among the 27 ones for Cluj-Napoca, well above the average results; the 'smart people' key field is ranked above the average in only one component: ethnic plurality (Giffinger et al., 2019).

To come back to the concept of participatory action research in connection to Cluj-Napoca, in what follows, the present study focuses on 'The Development Strategy of Cluj-Napoca for 2014-2020' published by Cluj Management and Planning Group (CMPG) on 24 November 2014. The strategy is presented as a 'complicated project that engulfs hundreds of people', as announced on [www.cmpg.ro](http://www.cmpg.ro). The time frame for the design of the project was February 2013--December 2014. The design process involved the following steps: defining the key concepts, preliminary structural analysis, 28 workgroups to define the sectoral policies, cross-sectional analysis, 200 operational programs, monitoring, evaluation and implementation systems, assumption of the planning at political and administrative level. The project views two key concepts: the quality of life and the structural involvement of groups of experts in the community. The strategic dimensions defined here consist of: people and community, the innovative, creative and competitive (ICC) city, urban development and spatial planning, the green city, good governance, local culture and identity, the healthy city and the safe city. The three strategic factors defined by the strategy are: innovation, university and participation (CMPG, 2014, pp. ii-vi).

As the website of Cluj-Napoca City Hall presents it, the Development Strategy is meant to foster 'creativity and innovation for a smart city' seen as the economic capital of Transylvania, inhabiting 500,000 people in the metropolitan area, as an academic center and youthful city with state and private universities and 80,000 students, as a multicultural city, as the foreigners' friendliest city in Europe (according to Eurostat), as a cultural and contemporary arts center, and as an innovation and IT hub (Cluj-Napoca City Hall, undated). The aim of the project is centered on 'the community in the context of a participatory system of governance', based on the principle of the inhabitants' quality of life while acknowledging, as the website announces, 'the capacity of the social actors to define and solve public problems'. The strategy proposes a 'quintuple helix' model for facilitating 'innovation systems based on knowledge', consisting of the five domains: public administration, private sector, NGOs, universities and the citizen. At the same time, it considers that the two engines for innovation in Cluj are (a) the cultural and creative industries, and (b) the university sector. The strategy defines the five thematic areas for smart city construction, and it specifically defines the implemented projects for: transport and urban mobility, citizens' safety, energy and environment, the relationship citizen--City Hall, and the internet infrastructure. The presentation of the Development Strategy for innovation and creativity in smart Cluj on the website of Cluj-Napoca



City Hall ends with the following conclusions: 'It is important to use technology to innovate, but it is more important to have an inclusive and collaborative city'; 'It is important to have smart cities and regions and use technology to solve everyday problems, but it is more important to understand that technology is just an instrument and that we need 'smart citizens''; 'We need a social contract based on the involvement of both social actors and citizens in the decision-making process' (Cluj-Napoca City Hall, undated).

As for 'smart citizens' in this smart city, the Development Strategy has a special chapter titled 'Creative Industries Strategy 2014-2020. Cluj-Napoca: Smarter City' coordinated by the Association 'Cluj-Napoca 2021 The European Capital of Culture' with a methodology designed by the Political Sciences Department of the Faculty of Political, Administrative and Communication Sciences of Babes-Bolyai University, Cluj-Napoca. The chapter states at the very beginning that the fundamental engine in transforming Cluj-Napoca into a 'smart city' is represented by creative industries, which is why it is necessary to reconsider creativity and innovation in both urban and social terms. Moreover, the 'smart city is based on the smart citizen', this latter concept meaning a citizen who is democratically allowed to participate in the process of creation and innovation, and this involvement and co-creation is the fundamental generator of a smart community able to redefine and reinvent itself as a reflexive and responsible entity, the owner of its own transformative processes. This is why the way to a successful 'smart Cluj' implies a gradual process of becoming a 'smarter Cluj' until getting to the real 'smart'. Additionally, the very process of defining the meanings of 'smart' for Cluj entails creation and social innovation, state the authors (CMPG, 2014, p. 793). 'Smart' means a city that efficiently uses its resources to lead the way to economic and social development, possible only by means of participative citizenry and of performing communication and transport infrastructure; 'smart' is more than a fashionable term because it is a possibility for certain cities that own the necessary energy for innovation in the human capital, in education and in an economy based on knowledge; ICT and IoT in a city do not make it smart because it is citizen active participation and co-creation that generate knowledge (CMPG, 2014, p. 795).

## 6. Conclusions

Undoubtedly, information and communications technology fascinate for at least one reason: they assist the progress of unprecedented connectivity among people and institutions. The effect of it is multifaceted. As this study outlines, digital technological innovations register never-ending immersion in everyday life and in all fields, and this necessitates permanent adaptability to the social and cultural contexts or else their impact is incoherent and inefficient. In short, there are two co-determiners that generate innovation and progress in cities, communities, societies: technological change going hand in hand with social and cultural change. The core element in both determinants is the human factor and this is what filters any external interventions in the process of self-conceptualization and self-construction, and then it replicates, in the larger context, all the results of this processing, preparation and refinement of change. Due to increased connectedness, this very act of participation and co-creation in innovation gets to be extended to a much larger scale, from the level of one individual, community or city to that of more individuals, communities and cities.

Digimodernist societies, to use Kirby's (2009) term, register a crisis at the level of both individual and collective identity construction because of the incoherence and inconsistency that go along with the uncontrolled implementation of digitalization; the effects of it are paradoxical because more novelty in ICT deepens the gap and differences among people and communities.

The very fashionable term 'smart' remains a very simple term when put next to any 'device', but it turns into an open-ended and complex concept when associated with 'people', 'community' and 'city', because of the multiple meanings that result from this correlation and the problematic 'smart plus city' or 'smart plus community' actually superposes with the larger dichotomy mentioned above, which is also the topic of this text, namely technology vs. the social. Besides meaning places with hyper-connected networking and strong infrastructure by means of ICTs, 'smart' in cities means smart economy, smart governance, smart living, smart mobility, smart environment and smart people, this last concept meaning more than the ability to use smart devices, but also

educated and empowered citizens who co-participate in the very process of implementation of change, persons able to and willing to learn to intelligently engage with one another and with the cultural and social context that they belong to. Such people take hold of education, lifelong learning, open-mindedness and are open to ethnic plurality (according to Giffinger et al., 2019). They own 'collective intelligence' needed for creating value for all the contributors involved in the process of change. Collective intelligence is also the core element for a community-based model of governance. As mentioned before, such perspectives require human-centered approaches to any design processes meant to implement innovation and development, PAR being one of the possibilities.

As regards the particular case of Cluj as a smart city, often called by media the 'Silicon Valley of Eastern Europe': all the concepts above have been identified in the Development Strategy of the Cluj-Napoca City for 2014-2020 and in what resulted from it, in the tens of projects implemented for the community and the city. According to TUWIEN and [www.smart-cities.eu](http://www.smart-cities.eu), Cluj ranks above the average in smart governance and smart environment and the 'education facilities' factor, belonging to the 'smart living' field, is the highest ranking subsequent domain from among all. The university sector of Cluj and the cultural and creative industries are seen as the 'engines for innovation'. The 'citizens' make one of the 'quintuple helix' model for facilitating innovation in Cluj-Napoca, according to this development strategy, which understands and demonstrates that technological innovation driving to 'smartness' is only possible in an 'inclusive and collaborative' city that needs smart citizens. This study has especially focused on the Development Strategy of the City of Cluj-Napoca designed by Cluj Management and Planning Group in 2014 without exhaustively focusing on the tens of projects and programs initiated and implemented or in the course of implementation in order to boost creativity and innovation, not to mention the participative planning projects belonging to other stakeholders in the city, which is one of the limits of the present study.

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(1) The full and correct name of the city is Cluj-Napoca, but it is often shortened to Cluj both in day to day life and often in international media.

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