Since the World Wide Web was launched, a lot has happened in the everyday life of the people. More and more of us have had access to the latest information and reach friends or establish business via internet and social media. No doubt, this has dramatically changed the traditional interactions of people. As an urban trend, in the last decades the need for urban public spaces for spontaneous public life and involvement with the environment have increased due to the decrease of space, especially greenspace, resulting from phenomena such as fast urbanisation and privatisation of spaces. In consequence, and as potential solution to the problem, new virtual and digital spaces are created as public spaces thanks to the development of ICT. Whether it will be successful or not is still uncertain. Public space has new senses and meanings. It is not only a physical place but more like a virtual platform, which provides space for interactions formerly taking place in physical, material form. The changing dynamics of urban activities and lifestyles as well as the use of public spaces have been becoming more and more important in urban context. For this reason researchers have increasingly been focusing on the new interfaces and platforms of urban changes, which have not altered a lot in meaning, but more in their manifestation. Claiming equal rights for every citizen not only in ‘real’ material life but in the digital world as well has justifiably become a main issue, what has strong influence on public participation methods and the ways of urban planning and development.

The world of internet seems to be equal and democratic, providing the freedom of speech to everyone, while disadvantages are less articulated. Optimised and safe places are created which are claimed to be accessible for everyone, but actually only if certain preconditions, such as sufficient internet connection, are given. This creates a digital divide between various groups of various societies. Moreover, the networks which we are constantly getting connected to are algorithm-based, and they are filtered by the network-operators according to our search history or temporarily saved internet files. So the information we receive is essentially modified. Therefore the real decision-making is neither in the hands of the people, nor in the hands of politicians, but, in several cases, in those of companies, which make recommendations on what is relevant and important for the people in order to create clicks and site visits, and actually profit. The owner, may it be a political actor, an enterprise or a civil movement, has the right to exclude someone from the created virtual place, what means that they own a public and collective place, which is digitally existing and nowadays used in a similar way as ‘material public spaces’ were before. This creates inequality in the digital world. So while people are using digital platforms to interact and live public life, exclusion and unequal access to the space and the city still exist in the digital world just as they did before in material public spaces. The shift to using digital spaces instead of material ones has not resulted in many changes in terms of which groups are excluded, either. They are more or less the same as they were before. In light of these processes the book suggests that Harvey’s concept on the production of space and Lefebvre’s theory on the right to the city
should be rethought and adapted to the digital world to help remedy inequalities. One of the main aims is to highlight and demonstrate the technology-created and recently highly debated forms of injustice and inequality and to offer alternative solutions for eliminating the mentioned unjust situations by using various modes of ICT.

The book has three main editors and 28 contributors, what enables a broad insight into the various aspects of how an increasingly digitalised world influences the everyday life of the city and its citizens. As the seventh volume of the ‘Digital Cities Series’, the anthology, not breaking with traditions, embraces peer-reviewed publications from the Digital Cities Workshop. The workshop was established in 1999 in order to answer the challenges of the ICT boom. Since then a vast amount of papers has been published on urban informatics. This book is one of the newest ones.

The book is an interdisciplinary work, which brings urban planning and urbanisation, IT-development and informatics, financial issues and economics under the umbrella of spatial theory and geography. The authors are opinion leaders in the topic of urban informatics and urban interaction design with various research topics embracing urban futures, social media, food and digital security, community engagement and development, sociotechnical innovation, environmental and urban sustainability, creative social entrepreneurship, and city networks.

Marcus Foti, one of the editors and founder of the Urban Informatics Research Lab in Brisbane has great experience in researching human-computer relations. In his works he applies informatics in order to understand urban changes caused by technology (e.g. Foti, M. 2009, 2014). Martin Brynskov from the Aarhus University in Denmark is member of the Participatory IT Centre and Digital Design Lab and the founder of the ‘Smart Aarhus’. ‘Smart Aarhus’ is a laboratory conducting digital urban research aimed at improving urban life by testing smart investments and facilities. It involves people, local governments and the private sector, and tends to establish collaboration between cities as well to promote sustainability. Brynskov’s main research interests are digital urban living and architecture and the adaptation of digital architectural elements in urban planning. Timo Ojala is leader of the Urban Computing and Culture research group in Oulu, Finland. Ojala participated in several multidisciplinary projects focusing on personal urban interactions and ICT related changes. His main research fields include the digital city and hybrid (virtual and real world) reality.

The volume presents different viewpoints and aspects on urban informatics and digital urbanism, what makes it a useful handbook with its thirteen individual but connected chapters for geographers, sociologists, economists and urbanists, who are working in ICT-based urban development and design. The book not only proves and approves the importance of Smart City concepts and projects but extends the idea with a new aspect replying to the critics of smart development, who consider the concept too technocratic and insensitive to the interests of society and community. The authors present current trends, tools and platforms in ICT and their adoption in everyday life and routine, and also in urban place use practices. The technology-based aspect gives practical insight for the reader. In the meantime authors present theories and policy patterns as well through in-depth case studies.

The first chapter focuses on technology-driven changes in the use of urban public space and the flow of products, people and capital within the cities. It accepts and rethinks Jan Gehl’s idea about places and activities. Here the activities of people in public urban places are categorised as necessary, optional and social activities, but Gehl does not calculate with the new digital activities as option. Digital activities sometime connect the ‘original activities’ of Gehl and connect them. In the digital city people are doing not just necessary activities. A typical example is waiting, during which people can also contact with their friends, family or business partners, and establish social activity through their mobile devices. There is a declining trend in the public activities in public spaces described by Gehl in his seminal work. Yet, in the meantime social activity taking place in digital public spaces is on the rise. This shift often causes some misunderstandings in research about public space, since the relocation of activities from the physical world to the digital world makes the original categories permeable and hard to measure.

The authors introduce new alternatives and methods aimed at stopping the constant decrease of public activities in public spaces, which is due to the spread of digital devices. In the chapter ‘Digital Design Interventions for Creating New Presentation of Self in Public Urban Places’ by Seeburger, J. et al. interesting ideas and new programmes are presented which help through digital access to apps and softwares in avoiding that material public spaces lose their function. On Capital Music and YourScreen people can anonymously share music and video with each other. PlaceTags enables people to tag visited public spaces and post their experiences, similarly to the Japanese Keita mizu place-specific game, which uses photos taken by the mobile phone cameras to identify places. These programmes have a lot in common with the newly released PokémonGO, which has created new practices in urban public spaces, but has also generated worldwide debates. The authors underline that these apps can increase the ‘urban experience’ by enabling people to live the public spaces, which in their traditional form have become dull and boring for the younger generations, as eventful and exciting places full of content. A tree becomes a niche for Pokémons,
a statue with a QR code becomes a place with message. The mentioned apps and similar ones can make people interact more or find hidden beauties of the cities. Moreover, these programs make aware both the public and policy-makers and entrepreneurs that the cityscape can be understood in many different ways, in form of pictures, videos, sounds or noise, and they can help people get in touch along commonly perceived and similarly lived situations.

All senses play an important role in better understanding the cities, but visual experiences are undoubtedly considered as the most important impressions for the majority of the people. Technology has reformed building facades since the early 20th century by placing neon lights on them. As Behrens, M. et al. state in the chapter ‘Designing Media Architectural Interfaces for Interactions in Urban Spaces’ digital technologies are now embedded in the cityscapes, as is well exemplified by Times Square in New York or Federation Square in Melbourne. Beyond bringing forth architectural renewal, these changes also raise debate about Human-Computer Interactions (HCI) given that public displays have become highly incorporated in the built environment. These digital screens serve multiple purposes. They can be used in place-marketing and advertisement, to help people adapt information, and might prove fundamental as architectural building component. The question may emerge whether these screens can be used as cultural intermediaries, as a specific mode of interaction, or as a platform for civic participation or resistance. The book also suggests new steps and strategies in implementing these technologies in urban design and planning to avoid worst practices, and to create more successful and more equal urban development for the excluded groups as well. As Melgaço, L. et al. show in the chapter ‘Case Study of a Rural Brazilian Community’, the expression of opinion can be empowered by digital devices. Still, long-term management is needed to enable people through these new techniques to use public spaces or tell their opinion. The VEIV programme in London and the SCSD in São Paulo let people engage with newly implemented projects and comment them. Public spaces are not only physical sites of activities, but sites of awareness and action too. Through the new interfaces mediated by the new digital architectural components people can be better and more equally informed about urban development and planning.

In the last decades urban policy has significantly changed due to these processes. The notion of smart cities has become essential in urban planning and design, especially in the Western countries. Besides, more and more countries in the Global South are developing and realising their own smart city concepts. Adapting technology in urban life helps to make cities greener and more sustainable, and to connect citizens with the city in new ways and on new platforms, like e-governance, information flow or e-commerce.

After the first main focus which was about urban interactions and new interfaces for that, the second major focus of the book is on the citizens’ action which can be articulated by using ICT. The chapters in this part highlight three main components of the technical agency necessary for citizen action. These are power, knowledge and appropriate occasion. The latter means those circumstances and spatial settings, when and where knowledge and power stands together and both are ready to be used for urban changes. As it was described above, the spread of ICT does not cure that marginalised groups are often excluded from the flow of information and, hence, from decision-making. In some extreme cases powerful actors consciously exploit this sort of social disparity, resulting in that technological development is rather intensifying social struggle. For this reason, technology-driven social inequity should be treated as policy issue as well.

The volume presents a case study in Cape Town, South Africa, where technology is used to promote social justice through community based action. The distribution of infrastructure and (social) services is highly unequal due to the historical heritage of the apartheid system. The digital divide shows similar patterns, strongly correlated with racial, gender, education and age differences. Researchers started a digital campaign to underline that community activism can never be just digital. Other types of activism, including informal or interactive, must also be involved. Digital activism can surely help people use basic services for which they have constitutional rights, but, in practice, no actual access as the chapter ‘From the Fringes: South Africa’s Smart Township Citizens’ from Mitchell, H. et al. presents. It is worth noting that in the East Central European (ECE) region there are also initiatives to increasingly use digital devices in order to help people, but a complex program like the one in South Africa has not been launched yet.

To foster such progressive trends, smart cities should be opened up for people and thus become sociable smart cities. The key is to extend public-private partnerships with ‘people’, and promote PPPs by making data accessible for a broad public and enabling meaningful involvement in development. The authors also envisage the sociable smart city, which means that cooperative designing and/or planning and research are connected to, and the cooperation of people and other stakeholders are essential parts of, planning and policy making processes, not only in the beginning, but also in later phases. The authors highlight the importance of monitoring and benchmarking as well. This notion is based on the Participatory Action Research (PAR) approach, which is becoming more and more common in Western societies, although also fuelling debates in the ECE region. The strategy of the PAR is to democratise decision-making and link it to real community needs.
In order to improve problem-solving, it implements the ‘learning through involvement’ method, which helps to increase human resource capacities. In East Central Europe the transition opened the floor for rapid privatisation and economic deregulation, which resulted in many PPP projects with a lot of unexpected outcomes leading to intensive political debates. Corruption was also broadly claimed to be a concomitant of these kinds of partnerships. As another burden, throughout the socialist times there was hardly any space for civil initiatives and cooperation. This legacy will presumably hinder the development of socially extended PPPPs in East Central Europe.

Technology has become a basic issue policies address, what has several advantages, but many disadvantages as well. In many terms it does not close the gap between various social groups. Technology and open data have always played an important part in military strategies, national security issues, mass communication and propaganda. The book presents a Brazilian case study about how technology is used by the political power to hinder grassroots initiatives or civil resistance. Lea Rëkov discusses the process of empowerment through media in the chapter ‘Police, Protests, and Policy in Rio de Janeiro–Mega-Events, Networked Culture, and the Right to the City’. In fact, digital deprivation of people is not a unique issue in Brazil, but increasingly a global one. National governments are taking steps to regulate digital liberty and use cyber-monitoring in order to ‘guarantee law and order’, which might constrain human rights in pseudo-authoritarian ways, even in cases the majority of society does not regard this as justified. Digital protest and empowerment is also connected to the Arab Spring which, in the book, is partly stated as a good example for empowering people. It is still questionable whether protest and resistance against a regime or an event through digital interfaces can work at all, or will be able to work successfully in the long term in the ECE region. Some examples show that social and mass media campaigns where political parties and organisations try to mobilise their voters often prove less efficient than expected (Lau, R.R. and Pomper, G.M. 2004; Vergez, C. 2009).

The third part of the book discusses democratic and participation-based forms of city-making processes. The knowledge, time and money of the people often help to contribute in urban improvement and development, may it be local or global scale. The authors investigate whether urban development can be fostered by participatory budgeting (PB) in a world where crowdfunding and crowdsourcing have become everyday phenomena. Also in the ECE region several crowdfunding pages appeared, which can be useful for small-scale and community-led neighbourhood developments and urban renewal.

Democratic decision-making is impossible without sufficient access to information and organising debates about which strategies people prioritise in public issues. These are essential prerequisites for making feasible proposals, which then should be evaluated and voted about on basis of participation and planning in the same time, usually referred to as co-design. The book presents case studies and analyses on open government and participatory budgeting and discusses the pros and cons of actually implemented projects. Such projects have several challenges, among which the book highlights some major issues. Politicians have a fear of losing power in case they involve people in the decision-making process. It is hard to define which data should be open. Security, privacy and copyright issues involve legal challenges. Applying ICT in planning and design demands resources, such as human resources (e.g. knowledge and free time), infrastructure and sufficient funding. This is often a bottleneck in East Central Europe, because if financing is reliant on local and national authorities, it often falls short from what the project would actually necessitate. The lack of funding also can hinder IT-based participatory planning. The authors come to the conclusion that in a democratic country people want to be involved in planning from the very beginning without being asked whether they want to do so. Several issues are identified concerning participatory budgeting (Stortone, S. et al.), data-based value-added city services (Ilhan, A. et al.) and community-building frameworks (McGinley, T. et al.), as well as several goals to achieve, like commonly funded public developments, rational and efficient data-use or co-design supported by diverse groups of stakeholders. There is a need to have common ideas and find solutions providing the most for all stakeholders.

In the epilogue Saskia Sassen addresses how technology has increasingly becoming urbanised, and how new, digital, cities have appeared. ICT can make cities outlive and overgrow companies and even nation-states in terms of power and technology. Since the cities are in constant change and, therefore, in a ‘permanent beta’ state of using IT language, there is a perpetual need for change and innovation. Rapid shifts can also lead to fast fall, however, in case of lack of innovation and ability for adaptation. So the new type of city, the digital city must be paid attention to by all participants. Sassen emphasises that we shall not forget that although the city is often adaptive, but sometimes it is resistant, since it is the residence of people with diverse individual goals, ideas and preferences. The precondition for open-source and participatory urban informatics is that DIY and grassroots movements are fostered by focused policies. Hardware cannot work without software. Both are needed for proper operation. Sassen underlines the need for technology resulting from social activity within the city. Metaphorically, the city and its built environment can be considered as the hardware, and
the people and their practices, such as the use of ICT and innovation, as the software. Until we do privilege technology over people and cannot find the balance how to create not only Smart, but Sociable Smart Cities, ICT and cities as software and hardware will not be cooperating fruitfully.

Considering the long-existing social, political and economic disparities between the global economic core formed by developed countries and the relatively newly emerged democracies in East Central Europe, the outcome of adapting urban informatics in the latter is doubtful. Firstly, the current digital divide can increase, since software and hardware necessities cannot be fulfilled by deprived and disadvantaged groups in terms of socio-economic status. Secondly, there is a lack of adequate education and training in the ICT sector, and language proficiency is not always sufficient for adapting innovations, especially in lower status groups. Thirdly, digital freedom is decreasing in some Eastern countries, and there is growing control over the internet and the use of digital devices. In case these tendencies are not cured, the divide between East and West cannot be reduced. The wealthier and more powerful groups, like upper class and upper middle class people will be closing the gap, while the poor and deprived will become more and more excluded. The other scenario is that digital inclusiveness will be reached. This is possible, however, only in case of full engagement of all actors.

The book gives helpful and operative examples, not only for developed, but also for developing countries, which in certain cases and in certain respect are much similar to East Central European ones. The book is a ‘serial key’ to the knowledge and the software. The question is whether East Central European countries can adapt it to their hardware.

**REFERENCES**


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