

Technological Interface of the City – The Promise of a Real Bottom-Up Urban Planning?

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The paper shows how developing social networking services, geo-media applications, e-management tools, and even some particular types of web ‘games’ may contribute to the creation of technological interfaces of our cities. Nevertheless, the paper calls into question whether these technological environments may contribute to the real change in urban planning – the change from the top-down to the bottom-up approach.

Key words: city, interface, technology, bottom-up, urban development

Introduction

The subject of bringing information and communications technology (ICT) into play of urban planning has now become a recurrent item. However, in contrast to earlier endeavors, it is no longer to be a tool of a top-down comprehensive decision-making, but a promise of a real bottom-up, open-source, collaborative and radical – sometimes even revolutionary – planning. New ideas have emerged in the field of urban innovations: using social networking services for place-based community development; involving geo-media technology into citizens’ and market everyday decision making process; providing e-management tools as means of empowering citizens’ participation; and even creating some particular types of web ‘games’ that support expressing collective needs and visions, or, at least, serve as educational tools. All of them contribute to the creation of technological interfaces of our cities: they exist between people and physical structures of cities, between people and city administration, and just between people themselves.

There is a big hope placed in those interfaces, which seem to make urban planning not only smarter, but more democratic and much more just. Nevertheless, some old arguments, which show weaknesses of employing information and communications technologies directly into urban planning, should be recalled and reinterpreted within new context. Therefore, the paper calls into question whether these technological environments may truly contribute to the real change in urban planning – the change from the top-down to the bottom-up approach.

The Dream of a Real Bottom-Up Urban Planning

In their very roots, early visions of urban planning were predominantly bottom-up, grassroots, and downright anarchistic ideas. As Peter Hall shows, they “stemmed from the anarchist movement, which flourished in the last decades of the nineteenth century and the first years of the twentieth” [1: 3]. None of the prime urban planners, neither Patrick Geddes nor Ebenezer Howard, was a professional architect or planner. Neither of them held any formal political power as well. They rather expressed a resounding voice of society.

Nevertheless, with the passing of time, the modernistic approach to urban planning has become more and more centralized, hard-handed and top-down. Whether because of lack of tools or because of complexity of urban issues, urban planning remained in the hands of governments and professionals. But this tendency had to collapse in the middle of XX century, when the Civic Rights Movement in the USA, liberal tendencies in world economy, and Marxist-theory-driven revolts in Europe gained their momentums. Then, two general directions could be recognized. The first approach was to limit the scope of urban planning by a decisive reduction of issues’ scale, as Jane Jacobs in her “The Death and Life of Great American Cities” argued [2], or by abandoning urban planning at all, as some avant-garde British planners in their “Non-Plan” concept proposed [3]. The second approach was to keep comprehensive urban planning as essential for cities development, but to develop better methodology and suitable tools of decision making process. The hope placed in ITC was substantial for this approach. After all, even Non-Plan concept advocates ad-

mitted: “The essence of the new situation is that we can master vastly greater amounts of information than was hitherto thought possible – information essentially about the effect of certain defined actions upon operation of a system. The practical implications are everywhere very large, but nowhere are they greater than in the area we loosely call planning” [3: 20]. Even they were ready to accept comprehensive urban planning if only open and based on reasonable and productive data analysis.

Yet, both approaches were misleading. Finally, the first one turned out to be powerless, while the second insufficiently democratic. It seemed that neither bottom-up had tools to be effective, nor ICT had made top-down open and accessible enough. Therefore, nowadays, the guidelines of the New Charter of Athens calls for a weak compromise between two approaches [4]: in this spirit, Sławomir Gzell argues for “a strategic planning, which goes top-down, and bottom-up participation in a process of plans implementation” [5: 25]. For last two decades this bipolar framework has seemed to be a reasonable model according to our conditions and abilities.

But today we are facing new opportunities, which are created by still rapidly emerging IC technologies. The communication network is no longer the limited Internet of Things, but all-embracing Internet of Everything [6]. It might be thought that no longer the lack of tools be the argument against the change. As Anthony Townsend writes, “Look in your pocket. You already own a smart-city construction kit. (...) We are witnessing the birth of a new civic movement, as the smartphone becomes a platform for reinventing cities from the bottom up” [7: xiv]. For Townsend, the Smart City is not just a city full of technology, but the city created, developed and run by the people, who are powerful thanks to the technology. In his vision, the city might be run by an open-source code written jointly by whole urban community. If he was right, the dream of a real bottom-up urban planning might finally come true.

Technological Interface of the City

The subject of cyberspaces has been an inspiring issue since 1960s. Since then a relation between people, cities and cyberspaces – ‘interfaces’ generally speaking – has been widely discussed. Lately, in his “The Cybercities Reader,” Stephen Graham collected the most important and influential papers of this 50-year-long discourse, in which the question of urban strategies and policies has its own place: „Clearly, it is no longer adequate to consider policies for cities and those for telecommunications and new media entirely separately” [8: 342].

Yet, for most of the time, the opportunities given by information technologies within the “network society” – as Manuel Castells called it – although momentous, were still seen as exclusive [9] and unembodying, thus fundamentally contrary to the liberal-democratic values [10]. But in the last years scientists seemed to change their minds. Felix

Stalder, who is an author of Castell’s monograph, shows that remarkable expansion of networks and personal electronic devices have already made them affordable to almost all, therefore Castell’s critic is less valid now [11]. Furthermore, the problem of embodiment of technology users was studied by Charles Ess, who claims: “The result is that the strong polarities undergirding 1990s’ dualisms between the »real« and the »virtual,« the »offline« vs. the »online,« etc., simply don’t hold up” [12: 110]. Ess admits that Web 2.0 users are special kinds of “relational selves”, even a “smeared-out selves”, nevertheless he rejects Aldous Huxley’s vision of people who adore the technologies so much that they undo their own capacities to think. Now we can really consider information technology realm not as an enslavement, and not as a separate cybernetic world out of touch with reality, but as a tool in the hands of the people. And what is more, if Web 2.0 has made its users more active and personalized, Geospatial Web 3.0 makes them geographically defined and spatially interrelated. As Anna Nacher writes, the Geoweb is already “more intertwined with real places and tangible geographical spaces than with virtual worlds” [12: 198]. This seems to be a crucial novelty that finds its application in urban environment: “most of actions, applications and interfaces thematize urban environment, hence it is commonly called »urban computing«” [12: 203].

Parametric, Narrative and Indirect Planning

The usage of the IC technology within urban planning participatory practice is usually understood in terms of using CAD and GIS systems, i.e. of building, computing and exploiting of open-source databases. In this spirit, Małgorzata Hanzl conducted her analysis of applications being trialled in practice in last decade [13]. Nevertheless, the goal of this paper is to outline a broader perspective, in which CAD and GIS applications are merely ICT tools, therefore the term “technological interface” is used instead of the term “database” here. Anyway, needless to say, databases and CAD and GIS applications are virtually inherent components of technological urban interfaces of any kind.

This paper’s approach requires establishing of some common framework. Therefore, I propose to divide examples into three groups:

- “Parametric Planning,” which encompasses projects being run by quantitative algorithms and serving as consensus-making or simulation machines;
- “Narrative Planning,” which encompasses projects essentially based on qualitative values;
- “Indirect Planning,” which encompasses projects which goal is to affect people’s behavior and some market processes, which, in turn, affect formal decision-making process as well.

Within these categories, author’s attention will be paid to all three aspects of decision-making process: establishing the methods of decision making; choosing objectives and means of collaboration; and picking design solutions [14:

49]. The table [table 1] shows the most important differences between the categories. Advantages and limitations of projects are pointed out as well.

Parametric Planning

Some examples of using ICT within urban planning realm are given by editors of “Space, Time, Play” [15], who argue that “Today, we again face the development of new typologies of space – spaces that are emerging from the superimposition of the physical and the virtual” [15: 11]. Moreover, this superimposition, as they show, allows us to use computer games-like applications to solve real urban problems. Anyway, most of these projects have to be classified within the first group.

One of examples is the “SpaceFighter” developed by the MVRDV architectural studio: “SpaceFighter is a game meant to model the complexity of time-based competitive urban developments” [16: 362]. The authors of the application believe, that “Perhaps this is the core of the Evolutionary City—here software meets ideology, here it activates or motivates democracy” [16: 362]. Another interesting application, called “Kaisersrot,” was developed at the ETH in Zurich. As authors says: „Kaisersrot combines method with technology, thereby enabling urban guidance beyond common geographical zoning and plan layout; the form, location and program of anticipated buildings, plots and infrastructures are not stipulated” [17: 364]. The “Kaisersrot” application makes it possible – as authors believe – to reduce a role of planners to mere moderation of the planning process, which was tested in a real planning context. Somewhat similar urban planning game, “The Harbour Game,” was run by Danish planners in the city of Aarhus. The authors’ purpose was to engage citizens in the very core of decision making: „The overall goal of the project is to challenge existing approaches to urban planning in which citizens typically are invited to join the process only after the plan has already been formulated, leaving no room for constructive and proactive participation, but only for reactive »yays« or »nays.«” [18: 388].

Another significant example, especially for Polish researchers, is the project called “Warsaw as Emergent Structure: Em_Wwa 1.0” by Aleksandra Wasilkowska [19]. The goal of Wasilkowska’s project was to “build an ideal communication situation” [19: 7] in which the organic and non-hierarchical development would be possible. Wasilkowska focused on the Defilad Square in Warsaw, but not because of the lack of visions for it, but because of the “inability to articulate them, negotiate the multiplicity of interests, including these of a grassroots character, as well as the lack of tools for reaching a compromise and adjusting it to changeable reality” [19: 25]. The project was thought to respond to this need, but finally it has remained only a pure theoretical study, or rather an artistic manifesto.

The authors of these projects rate them positively, although they are aware of their intrinsic limitations. They

can serve as tools in solving important planning problems, yet they still require a great deal of some officials’ control and legal validation, thus – in spite of much more advanced technological solutions – they are not much unlike their XX-century forerunners and cannot be called “real bottom-up.”

Narrative Planning

Some of civic innovators and progressive planners try to go beyond quantitative boundaries of technology and to use ICT applications as mere tools supporting building of collective visions – plotting collective narrations. In fact, it is usually hard to set out their projects whether they are real urban planning tools, or rather ‘mere’ artistic experiments. Anyway, in this regard, one interesting example is a project named “PlastiCity,” which was launched by game artist Mathias Fuchs in the city of Bradford. The goal of the author was to reduce some real-world professional constraints of urban planning in order to give users free rein and stimulate their creativity and imagination. As Fuchs explains, “PlastiCity enables residents of Bradford to experiment playfully with the city they live in. (...) With them [game tools] in hand, players can explore their urban environment, build or demolish buildings and modify existing buildings. (...) In doing so, they have to come to terms with various planning strategies and problems. They also have to understand that they are not changing their city as individuals, but are rather partaking in a mutual exchange of suggestions and planning acts” [20: 370] Fuchs makes no secret of the fact that this is more a fun than a real decision-making process. After all, it has to be fun, he admits.

Nevertheless, in some cases this “fun” approach is seemed to be contributing to real urban decision making. When The Design Trust for Public Spaces, an organization which supports bottom-up endeavors within urban planning realm of New York City, was asked by a non-profit group called the Friends of the High Line for help in planning one of the most brilliant urban projects of the last decade—the High Line Park, they decided to grant scholarships to two urbanists: Casey Jones, who prepared traditional urban analyses [21], and Keller Easterling, who created a web-based service allowing users to play the roles of all High Line stakeholders: developers, tourists, party-goers and even... animals [22]. As authors write, “Because Easterling’s project is not limited to attainable possibilities, its conjectural environments provide a counterpoint to Jones’s fact-based study” [21]. The interactivity of the project enabled planners to collect “spatial scenarios and narratives about a specific portion of this city” [20], which was a valuable supplement enriching a traditional research.

In both cases, authors’ goals were not to provide rigid framework for communicative process, but to stimulate people’s creativity as much as possible. Thanks to this, users of the “PlastiCity” project were able to propose the creation of a lake in the very center of the city, where no water has existed before. Without a doubt, it was much more than

mere answering to specified planning questions. Moreover, in some specific cases, narrative planning projects enable users to be at odds with the project's framework itself.

Indirect Planning

Although projects from the second group are much more decentralized, open, and bottom-up, Anthony Townsend gives little attention to them. He seeks still much more bottom-up, more radical examples. Hence, he is much more interested in activity of so-called civic hackers: "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" [7: 119]. These activities don't need to be legally started up by government officials, which does not mean that they are not able to make a big difference in effect.

According to Townsend, the first moment when information technology was directly used as a real bottom-up urban planning and managing tool came in 2008 when John Geraci launched the Do-It-Yourself City website "to convene and challenge the growing band of geeks who wanted to hack their own smart cities" [7: 155]. This platform allowed the creation of many civic projects, the "Sick City" prominent among them. For Geraci, the time came to break with the centralization paradigm, which, according to him, was dominant through centuries within the realm of urban planning and urban management [23]. Unfortunately, because of personal reasons, Geraci put an end to the service, „But DIYcity did live long enough to become an inspiration, catalyst, and blueprint for organizing civic hacking groups for years to come" [7: 158].

These "Indirect Planning" applications are, seeing from the perspective of this paper, the most promising, although, on the other hand, it is questionable whether calling them 'planning apps' is justified at all.

The Promise Never to Be Fulfilled?

To sum up, it should be pointed out that in every group of projects the great promise of technological interfaces is founded on the lingering belief that technology itself is neutral and nonideological, which is partially true at most. This was the biggest obstacle in using ICT within comprehensive planning paradigm, and likewise is the biggest weakness when one tries to inspire a real bottom-up urban planning paradigm using IC technology. The second observation is that we have to deal with classical paradox of democracy, in result of which two options can be recognized: either ICT apps are legally launched and have a real impact on urban planning issues, but then are only partially bottom-up at the most, or the apps are real radical bottom-up innovations, but then are rather powerless in the realm of direct urban planning decision making. These observations have been substantiated by given examples.

The authors of the "Kasiersrot" app calls it a „consensus-machine", because it provides an algorithm of comparing citizens' needs and of creating an optimal result: "A potential layout crystallizes when each inhabitant's wish list is processed and the equilibrium of concurring interests is reached" [17: 364]. But although the app has, in fact, many useful features, the authors don't tell much about who and how defines this crucial algorithm. Also the authors of the "SpaceFighter" admits that: "In order to function as a collaborative platform, these games need a common representation and a common language, perhaps also accompanied by a new »translator« that continuously updates itself in order to fulfill these needs" [16: 362]. And again, there is no idea who and how would make a decision on this language, its rules, and its translators.

Instead, the authors of the "Harbour Game" don't avoid these questions and admit clearly that they have not only laid down the rules by themselves, but that they had to simplify them to make the app more accessible for citizens: "To keep the game accessible to everyone, you must focus on simple rules and abstract issues. This, unfortunately, means that the final results will be similarly open-ended, especially in comparison to results from game simulations designed for experts with complex rules and highly detailed levels of information" [18: 388]. Thus even the most innovative e-governing platforms, as the Cloud City for instance, have to be initiated and moderated by some authorities [24: 91]. In every case, some basic rules have to be established at the beginning. This is particularly significant in the case of the High Line project, where serious conflicts with neighborhood residents aroused with time—but Easterling's application could not predict this scenario, because she did not implement a 'resident' option at all!

Wasilkowska remarks accurately that technological platforms do not solve all planning problems: "The platform should be perceived and used as a generative supporting tool, since it will not substitute a sustainable development policy" [19: 25]. Hence, on the other hand, the apps can be created and used freely by artists, but then are limited to fun, educational games, which are narrowly influential, as in the case of the "PlastiCity" or the "DIYCity."

Those are reasons due to which urbanists are still rather skeptical in relation to using technological interfaces as platforms of real-life urban planning. Townsend remarks: "In their eyes, the results of most models are too coarse to be useful. The models ignore political reality and the messy way groups make decisions" [7: 297]. So probably Neil Leach is right when he says, "we should be cautious of ascribing too much potential to the digital realm, as we did in the euphoric early days of speculation; then, as now, this can too often border on a form of science fiction" [25: 331]. But anyway, we need to experiment and keep our eyes wide open, because sooner or later it may change from the promise never to be fulfilled to an offer not to be refused.

Table 1. Parametric, Narrative and Indirect Planning

	Parametric Planning	Narrative Planning	Indirect Planning
description	projects based on quantitative algorithms and serving as consensus-making or simulation machines	projects based on qualitative values and helping in collective scenarios-building	projects affecting people's behavior and some market processes, which, in turn, affect formal decision-making process
selected examples	SpaceFighters, Kaisersrot, Harbour Game, Em_Wwa 1.0	PlastiCity, HighLine: Plotting NYC	Do-It-Yourself City, SickCity,
advantages	results are directly implementable	building visions and strategies is possible	real bottom up, decentralized and open-source
limitations	limited by quantitative factors and rigid framework defined in advance	uneasy to implement results within real decision-making process	influence on planning decisions is indirect and uncontrolled

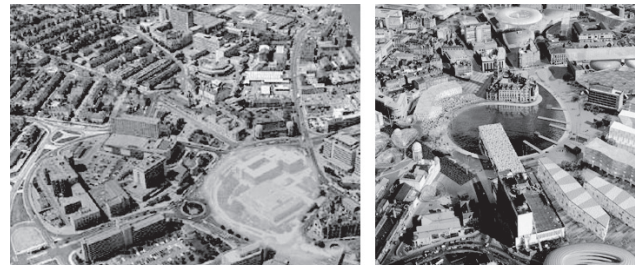


Figure 2. PlastiCity App, Mathias Fuchs (source: <http://creativegames.org.uk>, access: 15 Sept 2014)



Figure 3: SickCity App at D-I-Y City, John Geraci (source: <http://mostcontagious.wordpress.com>, access: 15 Sept 2014)

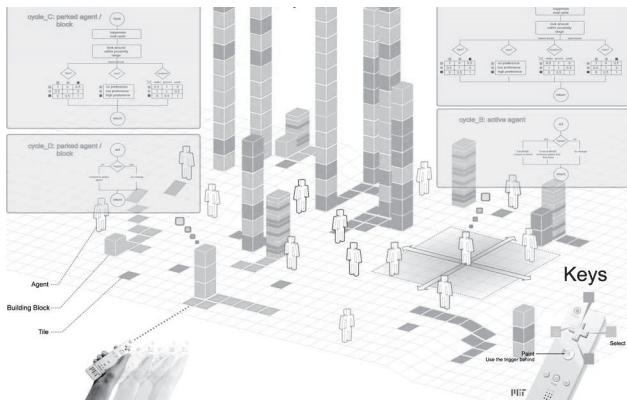


Figure 1. SpaceFighters App, MVRDV & MIT (source: <http://kaustuv.net>, access: 15 Sept 2014)

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