

1 The Ideas and Ideals in Urban Media

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Over the last decade a new set of media, technologies, software, and cultural practices has emerged that changes how we experience the city and shape our urban culture. They range from the mobile phone to GPS navigation; from iPhone apps to “smart” systems that optimize traffic circulation; from listening to an alternative soundtrack on an mp3 player to using a smart phone to locate friends or nearby sites that matches one’s interests.

There is no single name or discourse for these technologies. Labels range from “ubiquitous computing” to “locative media,” from “ambient intelligence” to “the Internet of things,” and from “the sentient city” to “urban informatics.”¹ Nor do these technologies have a single point of origin or trajectory of deployment—although many do have their genesis in military research programs.² Some are rolled out by government agencies that want to bring order to and control urban space. Others are marketed by profit-driven telecommunication companies trying to provide their customers with personalized services. Sometimes community workers take up the technology, hoping it can enhance mutual understanding between different cultural groups. There are even artists who work with these very technologies to critique their role in promoting a consumer based society or bringing about a “society of control.” And then there are the actual users of the technologies that often appropriate them in slightly different ways than intended by their designers or marketers.

What all these urban media—the catchall term that I will use in this chapter—have in common is that they no longer adhere to the anything-anytime-anywhere-new-media paradigm of the 1990s.³ Rather, they are centered on location-sensing capacities and aim to intervene in or add to a specific here-and-now. Their exact interventions differ, but as the examples given above show, urban media are making deep inroads on a diverse range of activities of place making—be they the top-down deployment by government agencies or the bottom-up appropriation by urbanites in their everyday life.⁴

In relation to the main theme of this book—the opportunity and challenges for social participation and engagement—two different ways of theorizing urban media

urge themselves on us. One would be to focus on the affordances of urban media and what these could mean for civic life.⁵ The main question then would be, How does the utilization of these urban media—as the outcome of an intricate process of design and appropriation—reshape our urban society?

In this chapter, however, I would like to turn that question more or less around. Rather than looking at the way technology reshapes urban culture, I want to investigate how ideas and ideals about the city also reshape technology. What role do our ideas of what a city should be play in the design and appropriation of urban media?

Technological and Urban Imaginaries

The shaping and appropriation of technology in relation to society represents a complex process that involves many different actors—from designers to government policymakers and investors, as well as users—all of whom have their own preferences and interests. The material characteristics of the technologies themselves factor into this relationship as well. Here I want to point to one specific yet important element in these complex assemblages: the performative role of what I will call the urban-technological imaginary.

As Anne Galloway has convincingly shown in her, “A Brief History of the Future of Urban Computing and Locative Media” (2008), it is impossible to reduce the introduction of new technologies to a single idea by a single actor or institution that is rationally rolled out, step by step. Galloway points to different “forums for negotiating” that play a part in deciding “what we want and what we don’t want,” among which she numbers open markets, institutional regulation (courts, government agencies, NGOs), special-interest groups, and grassroots activism.

In this negotiating process, Galloway explains, expectations play a very important part. Differing visions on technology—deliberately utopian or dystopian—are uttered in this process, and these may become performative. These visions, hopes, and fears—rational or irrational, fact based or emotionally appealing—may directly affect government policy decisions, design criteria, investment by venture capitalists, people’s stances toward a new product, and so on. Similarly, Flichy has called these performative expectations the “technological imaginary” (Flichy 1999; Marvin 1988).

In the field of urban development we find similar “imaginaries” at work. Is not the whole history of urban planning—from Ebenezer Howard’s Garden Cities to Disney’s gated community, Celebration, in Florida or Korea’s “smart and sustainable city,” Songdo—a history of (sometimes misguided) attempts to turn imaginary urban utopias into forms and volumes, bricks and mortar? “Urban imaginaries,” writes Jude Bloomfield (2006, 46), “focus on sensory and emotional experience and practices, on the imprint of collective memory on imagining how the city could be, on the different, often conflicting social constructions of the city’s future.”

In the development of urban media the technological imaginary and the urban imaginary come together to form a technourban imaginary. Central issues in the debates in which the technourban discussions are shaped include: What exactly is a city? How do we expect it to function? Who has which rights? How should we as citizens—with all our differences—live together in an urban society? How can we use technology to realize these ideas? Or how do new technologies jeopardize these ideals?

More formally, the technourban imaginary is shaped around both ideas of what a city is (Is a city primarily a bunch of infrastructure or should it be understood essentially as a community?) as well as around urban ideals (What kind of community do we want the city to be; how and to whose advantage should the infrastructure be managed?). Technourban imaginaries often combine these two framings in a particular approach of what a city should be.

These particular technourban imaginaries play a role in the design of many urban media technologies. Sometimes they are made explicit in the discussion around their implementation. At other times they are left implicit. Often they relate to particular disciplinary framings of technology and society, and they almost always build on (or explicitly want to counter) historical framings of urban culture. In the rest of this chapter I would like to bring out a few of these technourban imaginaries at work in the design and appropriation of urban media and investigate how they relate to participation and citizen engagement.

U-City

The first technourban imagination I want to discuss here can be found in a design approach called “u-City.” This term—short for “ubiquitous city”—has been coined by the Korean government in an attempt to promote an industry around the design of “smart cities.” The central idea is that urban computing should make urban life more comfortable, efficient, and easier to manage. The focus is on systems of smart traffic management, or smart objects such as tires that give off warnings when the pressure is too low. Another interest is the development of personalized services like receiving a message when your children have arrived safely at school. Hwang (2009) calls this idea “The City as a Service.”

We see similar promises in other discourses on ubiquitous computing, uttered at conferences, through advertising, and in professional publications, where new technologies are brought to the market to either increase efficiency or help personalize the city through friend finders or recommendation systems. The goal is to put people in control of their surroundings. Ubiquitous computing, it is argued, will create “seamless experiences” where computers operate calmly in the background.⁶

This particular way of understanding the city can be linked to a historic modernist idea of urban technology in which the city is envisioned as a collection of efficiently

managed, ever-improving technological infrastructures whose successive rollout will bring us a better life. In their book *Splintering Urbanism* (2001), Stephen Graham and Simon Marvin trace this idea back to the mid-nineteenth century and connect it with the scientific positivism of that era. Dazzling new technologies like electricity or more mundane ones such as sewer systems would lead the way to a better life. Ambitious municipalities, they write, wanted their cities to be a “blaze of light,” “rearing out of the darkness of the surrounding non-electrified regions” (p.46).⁷

These discussions on the benefits of the new infrastructures were held in concert with the first debates on the ills of the modern industrial metropolises that gave birth to the discipline of urban planning. This new professional field hoped to solve social problems like slumming, bad hygienic conditions, and the threat of social revolt by the emerging underclass by bringing a new unitary spatial order to the city. How exactly that was to be carried out varied according to which urban imaginary these planners subscribed to. Ebenezer Howard envisioned garden cities with a cooperative political and economic structure, whereas Baron Haussmann wanted to bring order to the existing city with his broad boulevards that simultaneously were to increase hygiene as well as the authorities' ability to assert military control over the masses.

At the same time, and on an important point, the u-city discourse of the twenty-first century also differs from the modernist infrastructural movement of the nineteenth century. Stephen Graham and Simon Marvin point out that in the modern industrial city, the ideals were universal access to infrastructure networks such as the electrical grid or the road system. These infrastructure networks integrated all citizens into the same technological system on the same level. Perhaps the most important aspect of Haussmann's urban imaginary, they state, was the idea to use infrastructural interventions to create a unitary city.

At the beginning of the twenty-first century, utilities and infrastructure are no longer seen as public services equally accessible by all, or as integrators that hold all the smaller elements together in a bigger system. Rather they are seen as marketable commodities sold to specific consumer groups. The modernist unitary ideal has given way to a post-Fordist and neoliberal one. For instance, a “smart toll road” will adapt its pricing scheme to demand: the busier the traffic, the higher the toll.

Such technological systems might make the city more efficient and tailored to individuals, yet these systems also address their users very differently. Whereas the modern infrastructure addresses its users as equal citizens, these personalized infrastructural services address them as “individual customers.” This could create new forms of inequality. Graham (2005) speaks of an emergence of “Software Sorted Geographies” and Lieven De Cauter (2004) warns of the emergence of a “Capsular Society.” Such developments could even create a shift in the relations between citizens and the city. Do people still see themselves as citizens—with all the rights and duties involved? Or are they starting to think of themselves as customers, which sets up a different

relationship between the “customer” and the owner of the system as well as between users themselves?⁸

Although this critique is valuable, driving it to extremes also risks overlooking opportunities that dynamic pricing systems and flexible services may allow for civic engagement. The problem that Graham and Marvin have diagnosed is not so much the technology itself, but the urban imaginary of a neoliberal city of services. Yet couldn't these same infrastructural technologies also be deployed in the service of other urban imaginaries—for instance, an environmentally sustainable city?

Take for instance the Smart Cities project at the MIT Media Lab. The way the city is framed is again as a collective of infrastructures: “Buildings and cities can usefully be compared to living bodies. They have skeleton and skin systems that provide shelter and protection to their inhabitants, metabolic systems that process inputs of materials and energy to support daily life, and now artificial nervous systems consisting of sensors, networks, and ubiquitously embedded computational capacity.”⁹ Yet here the application of ubiquitous computing is applied to making the city environmentally sustainable. The project includes a design for a new city car that can be rented through a dynamic pricing system. Popular routes and times of day are more expensive than other times and routes. The goal here is not to maximize profit or to provide exclusive services to the rich, but rather to allocate scarce resources such as natural resources and mobility as efficiently as possible.

Urban Flaneurs and Situationists

The second technourban imaginary that I want to discuss here is one often found in the world of locative media art (Tuters and Varnelis 2006). In this imaginary, two old urban tropes play an important role: Walter Benjamin's flaneur and Guy Debord's Situationist International movement.

Over the last decade, many artists and designers have criticized the commercial applications of urban media, such as those based on the ideal of the u-city. They point out that the urban-technological imaginary of a personalized city tailored to one's private preferences, while blocking out undesired places or people, endangers some of the essences of their own urban ideal: a city in which play, serendipity, and curiosity play an important role.

On the centennial celebration of the Futurist Manifesto, American researcher Eric Paulos published the “Manifesto of Open Disruption and Participation” (2009), which made the case for such a conceptualization of urban culture: “We claim that the successful ubiquitous computing tools, the ones we really want to cohabitate with, will be those that incorporate the full range of life experiences. We want our tools to sing of not just productivity but of our love of curiosity, the joy of wonderment, and the freshness of the unknown.” In the domain of locative media art¹⁰ we have seen a

number of experiments that match Paulos's call and have turned the urban imaginary of efficiency and personalization inside out. The project *You Are Not Here—A Dislocative Tourism Agency*, for instance, lets its participants experience the city space in an extended way. In this project a map of Baghdad is projected on the city grid of New York and participants are invited to make their way to a number of "Baghdad tourist spots" through the streets of New York. When they arrive at the corresponding location in Manhattan, they will find a sticker with a phone number. When dialed, they will hear a story about Baghdad.

The recent interest in "psychogeographic" artist interventions like this one is also apparent in art festivals that have emerged over the last few years, such as the Conflux festival in New York that wants to investigate "everyday urban life through emerging artistic, technological and social practice. . . . Over the course of the long weekend the sidewalks are literally transformed into a mobile laboratory for creative action. With tools ranging from traditional paper maps to high-tech mobile devices, artists present walking tours, public installations and interactive performance."¹¹

As Dimitris Charitos, Olga Paraskevopoulou, and Charalampos Rizopoulos (2008) have pointed out, projects like "You Are Not Here" clearly reflect the ideals of the 1950s–1960s Situationist International. This group of artists, writers, and architects centered around Guy Debord worked to counter the rationalist city models tailored to the consumerist logic of the "society of spectacle" with an approach centered on subjective experiences of the city, including areas and experiences marginalized in the dominant way of thinking about urban culture.¹²

Williams, Robles, and Dourish (2009) have pointed out that the Parisian poet Baudelaire and the German philosopher Walter Benjamin also form an important source of inspiration for many urban media practitioners. Here the image of the "flaneur" is often invoked as the "solitary and thoughtful stroller" that wanders around the city casting his glance at the turbulence of the crowds, picking up its idiosyncrasies as seeds for his own thoughts and feelings. Or as Kracauer has put it: "To the flaneur the sight of the city were like dreams to a hashish smoker" (quoted in McQuire 2008, 42). Williams, Robles, and Dourish (2009) note a similarity between this fin de siècle mode of being and a design approach encouraged by Paulos and Beckman, who write: "We marvel at mundane everyday experiences and objects that evoke mystery, doubt, and uncertainty. . . . How can we design technology to support such wonderment?" (quoted in Williams, Robles, and Dourish 2009, 7)?

Although a design approach based on the principles of wonder, surprise, confusion, or dislocation may indeed enrich the experience of the city, it is not without its critics. Williams and colleagues (2009) find the position of the flaneur too detached. One wonders from a safe distance about urban phenomena, but the flaneur is never really engaged or called into action. Flanerie "privilege[s] passive voyeurism and imagination tending towards illusion. The alternate mobilities, inhabitations and appropriations

alive in the city (homelessness and immigration, among other things) are left for examination by someone else” (Williams, Robles, and Dourish 2009, 7). Kazys Varnelis (2009) has attacked the rise of interest in Situationism on similar grounds by suggesting “Situationism’s fatal flaw is that . . . its goal was always to valorize individual experience over the collective.” There is thus a fine line of which designers working from this approach should be aware. While indeed locative media could aim to provide alternative experiences in the city, there is also the issue of how to truly engage the user.

The City as an Operating System

The third technourban imaginary I would like to bring out makes use of a metaphor in which the city is compared with computer systems. Here, the city is understood as an “operating system” or an “information processing system.” This approach to cities understands them as complex systems in which the city mainly functions as a marketplace where people exchange goods, information, and cultural practices.¹³

Agency is usually located at the level of the individual who is driven by his or her own goals and desires, yet on an aggregate level particular customs, legal codes, or institutions may emerge over time, thus hardening specific practices and power relations in stone, law, or today, software code. Once emerged, these same customs, codes, or institutions may enable or restrain future actions and goals of urbanites.¹⁴ They form the kernel of a civil society, so to speak.

Although the metaphor of the operating system itself is new, this way of framing the city also has its roots in earlier debates on urban culture. It is for instance related to the thoughts of Chicago School researcher Louis Wirth. In the late 1930s, in his influential article “Urbanism as a Way of Life” (1938), he laid out how the density of the city leads to cultural specialization, a spatial segregation of lifestyles, and a breakdown of rigid social structures.

Now, critics claim, a new urban operating system is on the rise. Wirth’s OS was based on a combination of high density and the spatial proximity of different groups of urbanites who, for the most part, remain strangers to each other. The “urban OS” of our time is written in software code, can sense individual actions in real time, and can aggregate these into data that can be used to actuate all sorts of actions. This, Anthony Townsend (2000, p5) claims, changes the metabolism of urban life. For instance, through the mobile phone “decision-making and management of everyday life is increasingly decentralized,” which means that the city system becomes “more complex and less predictable.” Townsend call this new complex system the “real-time city” “in which system conditions can be monitored and reacted to instantaneously [and at a distance].”

This idea of the city lies behind much of the work of MIT’s SENSEable City Lab. In many projects, the labs make use of the tracking affordances of urban media, tracing

the whereabouts of people, city buses, or other objects throughout the city. This data is fed into a system that aggregates this information in real time and can be used in different contexts. For instance, public transport could be adjusted to real-time movements of people in the city. Here the city is conceived as an operating system that—through various real-time sensor networks—generates all sorts of (aggregated) data streams. One of the goals of urban media designers is then to build relevant services—for either consumers or citizens—that make use of and build on these real-time data streams.

In the future these developments may lead to semantic knowledge bases. In an article on the SENSEable City WikiCity project, the researchers project a future in which you can ask your urban informatics device questions like “what is the best place—with regard to my current location, weather forecast, environmental conditions and other factors—to fly a kite today” (Calabrese, Kloeckl, and Ratti 2009)?

Now that may seem like a somewhat trivial affair, but of course this depends on the sort of questions you might use to personalize the city. Change the questions, and this approach may even empower new groups. Over the last few years, reports have surfaced about African farmers who receive market prices at different locations for their produce by SMS and so are able to negotiate better prices. Small shopkeepers—again in Africa—order their supplies by SMS rather than driving to bigger cities, or use the phone to schedule appointments with clients. People who work in the informal or semiformal economies can organize their life and their use of the city more efficiently and increase their knowledge of social processes and market conditions.

The City as a Commons

A fourth technourban imaginary frames the city as a commons—a set of resources that belong to the collective of citizens. Technology is then brought in to provide tools for citizens to collectively take care of their city. Examples are the use of wikis to allow for collective planning exercises (see Schuilenburg and De Jong 2006), or the use of reputation systems that allow for trust in collective action with unknown others (see Rheingold 2002).

Artist Usman Haque’s installation *Natural Fuse* is an interesting example that both illustrates and questions this approach. Participants in *Natural Fuse* receive a flower box equipped with watering equipment as well as with a bottle of vinegar. They also receive an electrical appliance such as a lamp, radio, or fan. The flower boxes and electrical appliances are linked to each other and (via the Internet) to the similar sets belonging to other users.

The central idea is that the CO₂ digestion of the plants in the network offsets the CO₂ emissions caused by the use of the electrical appliances. If all the participants in the network use less energy than their plants compensate for, the system will water the plants and they will grow. However, if all users in the system consume more energy

than can be compensated for, the system will start to kill plants by releasing the vinegar in the soil of the plants.

This means that if individuals use too much energy, other people's plants will be killed. On the other hand, if they choose to conserve energy, that means someone else in the system may make use of the CO₂-absorption capacities of their plants, allowing others to temporarily use more energy. A switch on the set illustrates this choice. Users can set their system to "selfish" and thus consume more energy than they offset with their plants, or they can set the switch to "selfless."

Natural Fuse thus turns the energy management into a commons—a space and resource shared by and accessible to all participants. The idea of the commons is based on the old British custom of the communal pasture where all herdsmen in the community were allowed to graze their cattle.

However, the collective management of a commons runs at a great risk. It will only work if participants are willing to cooperate and allow for mutual accommodation. If participants only follow their own rational self-interest, the commons risks overgrazing. As Garrett Hardin (1968) has written, "The rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another. . . . Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited."

Can we thus conceive of an urban media system that promotes the collective well-being? Could we conceive of some sort of peer-to-peer governance model that could prevent overuse of scarce resources?

This is (as I have demonstrated elsewhere) the question that *Natural Fuse* addresses; it illustrates the opportunities of an "urban energy commons" as well as the problem of the tragedy that bears the same name. It challenges our thinking about the viability of a networked urban commons. Yet it does not provide any definite answers: Would creating awareness through direct feedback mechanisms about the impact of rational selfish behavior be able to prevent it? Or would we instead need complex reputation systems? Or perhaps sentient bookkeeping systems in which our allotted ratios are kept or traded? Can we do this through peer-to-peer technologies, or do we need central institutions that act as trusted third parties (De Waal 2009a)?

The City as a Community of Strangers

The next technourban imaginary that I would like to bring out is the idea of the city as a community of strangers. Since the rise of the modern industrial metropolis, theorists such as Simmel, Sennett, Jacobs, and Lofland have pointed out that the main characteristic of urban life is to be surrounded by strangers who will remain strangers. Yet at the same time, one has to share resources and live together with these strangers and relate to their differences in some way or other (Simmel 1969; Sennett 1969; Lofland 1973; Jacobs [1961] 2000; McQuire 2008).

Both Jacobs and Lofland have demonstrated how the working of the city streets can build trust between strangers. In *The Death and Life of Great American Cities*, Jacobs describes how out of the many trivial repeated interactions of everyday life, a sense of trust between strangers is built up over time. Waiting together at the bus stop, exchanging small talk in the corner store, it is these kinds of interactions through which people become “familiar strangers” to each other. Jacobs states that “the sum of such casual, public contact at a local level . . . is a feeling for the public identity of people, a web of public respect and trust and a resource in time of personal or neighborhood need” (p. 67).

Jacobs has been critiqued for a nostalgic take on her cozy West Village city life, whereas such mechanisms in the city at large were thought to be impossible to maintain. Social geographers and urban sociologists such as Blokland and Ray (2008) have convincingly shown that such public familiarity is indeed a lot harder to find today than a few decades ago (also see Blokland 2005). Urbanites have become more mobile and their patterns of daily life are less synchronous, decreasing their opportunities for repeated interaction.

In the domain of urban media there is, however, a large interest in remediating or translating the idea of public familiarity with the help of digital media. In a way social networks like Twitter and MySpace do allow a sense of public familiarity even though one is not in the same place or same time. On the other hand, it could be argued that such networks are mainly made up of people who already know each other and thus does not do much for the building up of public familiarity—even though it is technically possible to “follow” or “befriend” strangers based on a geographic location.

Perhaps one of the best-known examples that builds on this idea of public familiarity is the project “Familiar Strangers” and the *Jabberwocky* application that came out of it. *Jabberwocky* is a mobile phone application that allows users to see if any familiar strangers are around—people that one has encountered before at other times and places. The designers of *Jabberwocky* hope that in this way a sense of feeling at home or even trust and solidarity can be promoted: “We believe that the extensions to this relationship using small personal wireless objects and applications on existing mobile phones can allow individuals to more acutely gauge their social relationship to people, places and the crowds around them over time. We also believe that such tools are capable of encouraging community solidarity, even transitory solidarity” (Paulos and Goodman 2004, 3).

The City as a Public Sphere

The last technourban imaginary I would like to discuss is the idea of the city as an active public sphere. This imaginary too departs from the notion that the city consists of strangers who must live together: the focus is now on how the city allows them to

be confronted with each other, to exchange ideas, and to debate the future of the city. Often this ideal is juxtaposed with the suburban ideal of homogeneity. Urban citizens among others, Richard Sennett claims, should not retreat to their comfort zones, but instead should embrace the complexities, differences, and conflicts that urban life brings about (Sennett 1970, 1977, 1990, 2001).

Over the last decade we have seen many urban media projects that in one way or another seem to answer Sennett's call (albeit sometimes indirectly). There is for instance a whole range of geoannotation projects that allow citizens to mark up urban space with their own ideas, histories, or thoughts. Often the hope is expressed that these projects will lead to an exchange of insights.

In an article in the 2006 *Leonardo Electronic Almanac*, Lily Shirvaneh expects that the sharing of experiences through locative media could lead to what she has called "social viscosity." The stories collected could work as crystallization points for (imagined) communities or starting points for processes of exchange, deliberation, or contestation. Shirvaneh suggests that "this viscosity of space is perceived as a bond that may exist not only between people with established relationships who can find each other 'on the street' in a mobile context, but also between strangers, thereby inspiring a new community and, possibly, creating the potential for a more democratized public space."

An example is the project *Textales* that uses an urban screen to bring about a site for contestation in the city. The initiators organized workshops in which participants were asked to make pictures of political issues that affected life in their neighborhood—such as housing inequity. These pictures were shown on an urban screen in the neighborhood and passersby could comment on the pictures by sending a text message that would be displayed on the screen. In an article on the project Annay and Strohecker (2009) directly refer to theories on democracy and deliberation and hope that a project like *Textales* can help to form "issue publics" around particular concerns in which a "collective epistemology" might arise "that helps us to consider our own viewpoints and those of our fellow citizens."

Conclusion

I have now shown six technourban imaginaries at work in both the design and appropriation of urban media. This list is not meant to be exhaustive. Rather I wanted to bring out a number of different and sometimes conflicting perspectives on what the city should be and how technology is thought to bring that ideal about. I wanted to show that whereas we often focus on the impact of technology on urban culture, the reverse is also true. Many urban media are purposely designed to remediate traditional ideas about urban culture.

Also, the neat categorization I have made here serves an analytic purpose only. Several of these technourban imaginaries could be combined. In fact, it could be

argued that projects whose main focus can be reduced to a single framing of what a city is are often problematic. For instance, advocates of the city as a set of personalized infrastructures might miss important points about the fact that a city is also a community and thus contributes to the balkanization of urban culture.

Similarly, many art projects that do address the city as a (political) community have their own critics. Many of these projects are noncommittal. Their duration is often short, their audience is a small self-selected crowd, and only seldom is there follow-up that might turn these art projects into a more sustainable addition to the experience of the city. Could they be integrated in the infrastructure of the city in a more durable way? In short, designers of urban media would do best to address several framings of the city at once. This criticism—although important—does not mean that these art projects are meaningless. What many of them at least do well is tease out the technourban imaginaries at work in the shaping of urban media. These can be valuable contributions to the general debate.

Only by bringing out these often-implicit urban ideals can we engage in the discussion of how these urban media can best serve society. That is what I have tried to do here. By highlighting the urban ideas and ideals at work in discussions on urban media, I hope to show that the process in which these technologies are designed and appropriated is an open one. And even though one or two of these urban-technological imaginaries may dominate the debate and design of new services, there are also alternatives.

Notes

This contribution builds on and elaborates some of my earlier work on this theme, especially De Waal 2009b. I also build on the notion of latent ideals in urban media as described in Williams, Robles, and Dourish 2009.

1. See for instance Galloway 2008 for an extensive list of different labels.
2. An important impetus for the development of urban media was the decision of the U.S. military in 2000 to make an unscrambled version of the GPS system available to the general public. From then on, the signal has been accurate enough to pinpoint users of GPS devices on street level rather than somewhere in a neighborhood. Many Location Based Media now make use of this location-sensing technology.
3. This shift from “placelessness” to “situatedness” has been theorized by Tuters and Varnelis 2006, Varnelis 2008, as well as Shepard and Greenfield 2007. On a formal level, Mark Tuters and Kazys Varnelis (2006, http://networkedpublics.org/locative_media/beyond_locative_media) have pointed out two main characteristic affordances of what they call “locative media” that enable this shift from “placelessness” to “situatedness.” One is the capacity to annotate places, “virtually tagging the world.” The other affordance has a phenomenological quality that enables “tracing the action of the subject in the world.”

4. As Lefebvre has shown, the experience of place is always a negotiation between the physical top-down design and ordering of space by governments, architects and developers, and the personal trajectory of its inhabitants—their history, memories, and symbolic interpretations of the space. Urban media can thus be understood as an extra layer somewhere between Lefebvre's top-down representation of space and his bottom-up representational space.

5. Hutchby (2001) has defined affordances as the “functional and relational aspects which frame while not determining the possibilities for agentic action in relation to an object. In this way technologies can be understood as artefacts which may be both shaped by and shaping of the practices humans use in interaction with, around and through them.” The term *affordances* “stress[es] that the range of possibilities for interpretation and action is nowhere near as open for either ‘writers’ or ‘readers’ as the technology as text metaphor implies. . . . We have to accept that technological artefacts do not amount simply to what their users make of them; what is made of them is accomplished in the interface between human aims and the artefact’s affordances” (p. 450).

6. Mark Weiser’s influential article “The Computer of the 21st Century” (1991) and his publication co-authored with Seely Brown, *Designing Calm Technology* (1995), are often referred to in this debate. See also Anne Galloway’s (2008, 113) take on the history of ubicomp, in which she explains how “the desire to have computing so seamlessly and efficiently embedded in our daily lives is grounded in a profoundly utopian vision connected to cultural and historical notions of technological ‘progress.’” At the same time she argues that Weiser’s claim has often been misunderstood. Although he argues for an “invisible” technology, he also stresses the importance of seamful experiences.

7. Graham and Marvin (2001) connect this positivist outlook on urban infrastructures with broader social developments. For instance, the urban reform movement inspired by this idea “was led by sanitarians, engineers, urban planners, and the growing middle class” and they “equated the efficiency of infrastructural systems with the quality of the entire civilization” (p. 44). The regulation of water for instance played an important part. The scientific discovery of bacteria and the privatization of bodily hygiene played was important for the ideas about the sanitized, hygienic city, and the emergence of underground waterducts.

8. See also my earlier contribution about this debate (De Waal 2009b).

9. William Mitchell, *Welcome!*, <http://cities.media.mit.edu/>.

10. The term “locative media” started to surface around 2003 as a label for art projects that used location-based technologies such as GPS receivers. Genealogies of locative media often trace the term to an artistic workshop organized in 2003 by Marc Tuters and Karlis Kalnins together with the RICX Media Centre in Latvia (see <http://locative.x-i.net> for a description of the workshop). The phrase “locative media” was initially invoked to demarcate this technological art practice from two other fields. The first was the artistic practice of “net.art” that focused on the placeless experience of cyberspace through the computer terminal. Locative media art was to break down the barrier between the physical world and a virtual world. It aimed to use technology to connect the database world of the Internet with the experience of real places. Second, the term “locative

media” claimed the use of these technologies for art practice rather than for commercial services that had started to develop under the name of “location-based services.”

11. See the Conflux website, “About,” <http://confluxfestival.org/2009/about/>.

12. Others also point out links with Constant’s infrastructural urban utopia New Babylon or Archigram’s advocacy for using technology to empower people to shape their own urban infrastructure (McQuire 2008). Similarly, the experimental interest of locative media art can also be linked to the vocabulary of 1960s architects such as Team Ten, who “were the first to seek a kind of town planning and architecture that could bring about pleasure, uncertainty, relaxation . . . and even disorder” (Rouillard 2007, 17).

13. See for example Anthony Townsend (2009, xxiii): “In the pre-electronic era, face-to-face proximity and the clustering of functions was the most efficient means of replicating, transmitting and searching for information in social and economic networks. Over time, new tools augmented this function, but in a sense the city itself is our original greatest information technology.”

14. This vision is brought forward in De Landa 2006.

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