

Beware of Smart People!

Redefining the
Smart City Paradigm towards
Inclusive Urbanism

*Symposium
Proceedings*

*Berlin, June 19th to
20th, 2015*

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EDITORS

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INTRODUCTION

The aim of this proceedings is to present the contributions and debates of our Summer 2015 “Beware of Smart People!” symposium. The symposium and the proceedings represent the interim results of our common research interest in the increasing digitalization of urban life. First, we ask how people can change and co-design the city as a commons, and secondly we seek to identify the opportunities and challenges offered by the Smart City paradigm in pursuit of this.

Urban development and management discourse are geared to the increasing impact of the Smart City paradigm which affects both urban planning and design practice, as well as research in the field and its funding allocation. At the Technische Universität Berlin (TU Berlin) there is a clear interest in smart city research and technology development, for example in simulation technologies that support urban communication, development and negotiation processes. In addition to these ongoing efforts our group focuses on the active and contributing role of people and societies in Smart Cities.

We are well aware of the political and scientific urgency of the Smart City paradigm as a facilitator to reconceptualize resource-efficient urban development. We realize that the cities where we work and conduct our research are building Smart City strategies and that research institutions increasingly fund research into the development of smart infrastructure and governance (for TU Berlin, this pertains especially to EU and national funds). Smart cities are considered a radical paradigm shift and motors of technological innovation, with buildings that respond dynamically to their environment. Traffic is automated in real time to ensure smooth circulation. NASA-style control centers run complex analytics models to synchronize urban processes. The argument behind all this: economic growth, higher quality of life, efficiency and risk control in the face of shrinking resources and impending climate change.

Within this process, the role of industry should not be underestimated. On the one hand, we are steering towards an all-embracing implementation of industrial ICT products (soft- and hardware) within existing cities. On the other hand, entire new Smart Cities are being built as all-encompassing industrial products in themselves, like New Songdo in South Korea, developed by Gale International and the IT company Cisco. In their essay Test Bed Urbanism Orit Halpern et al clearly point out that smart technologies and planning rather control uncertainty than risk. They argue that the discourse is industry-led and Europe/USA-oriented. They criticize its failure to grasp the diverse urban realities of co-production – the various forms of informal or bottom-up urban development – which play out more visibly in the global South. Instead, the idea of urbanity proclaimed in the “industrial” Smart City is a city without uncertainty, very similar to modernist planning logics: (1) to identify the city as an urban menace that (2) can be tamed only by planning and management. In the Smart City, modernist top-down management is replaced by horizontal organization, but it is an open question how this horizontality is constructed and which powers define and organize this “field.” Given the widespread presumption that the complexity of the urban is increasing and the obvious fact that our resources are shrinking, we shall be persuaded that only control and coordination provided by ICT-powered planning and management can guarantee the taming of the beast.

Within this discourse people (as individuals) and societies (as bodies) play a subordinate role, becoming passive beneficiaries, users or consumers. But who are these people – us – after all? It is astonishing that – though some municipal smart city concepts include the promise of more participatory decision-making processes within their programs (interestingly, those promoted by local governments and administrations demonstrate stronger involvement of social-democratic parties, as in Vienna, Amsterdam and Berlin) – these programs have not been developed in response to civil society demands. People are not asking that their cities become smarter. This smartification is contrasted by increasing calls from civil society and urban social movements for more encompassing inclusion in decision-making. The rule of urban technocracies legitimized through delegated power in representative democracies is being challenged. New urban actors are acquiring agency through situated knowledge, local expertise, social networking, and cooperation and collaboration skills. Behind these movements, as smart, intelligent or knowledgeable as they are, a seemingly parallel discourse to the Smart City paradigm is gaining ground – the discourse of the commons. Originally a spatial and material resource – e.g. a piece of land used jointly by members of a community – the commons today expand beyond the spatial. They encompass fundamental natural resources, cultural heritage and digital commons knowledge. Understood as commons, they are to be shared instead of being capitalized. Commons are defined as a combination of resources, people and practices: resources which are defined and managed by a group of people – of commoners – and a practice of commoning that cares for and fosters these resources without exhausting them. Commoning is a practice that seems closer than any other practice to a sustainable way of life. And a resource we all share in some way or other and co-produce is: our cities.

Are these two discourses – the discourse on the Smart City and the discourse on the urban commons – irreconcilable antagonists or do they share a common ground which needs to be uncovered, developed and advocated by us – the people? This question is by no means merely theoretical. It is also a very practical question which pertains to the management and distribution of the resources we depend on. It is a very political question as it demands negotiation and the taking of sides. And it is an ethical question in that it relates to how we respect and stand up for each other – our fellow human beings and also the non-human nature for which we are responsible.

With the symposium and proceedings we want to: (1) reflect on the Smart City as a contested paradigm, (2) shift the discourse towards the notion of the urban as co-produced by many voices, and (3) attempt to redefine Smart City by putting citizens (in the sense of everyone producing and living in the city) as “smart people” at the core of the debate.

The proceedings follow the structure of the symposium, being divided into three thematically interrelated sessions: Production, Management, and Practice. Each session will be opened by an introduction by the session hosts, followed by our invited speakers’ contributions. In order to follow the inspiring and critical discussions after each session, we have added transcripts of some of our audience’s inputs. We have tried to reflect upon the symposium in our final remarks, but these should not be read as a closing statement but rather as a point of departure for our and our colleagues’ further research endeavors.

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Editors

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Luca Mulé

KEYNOTE

Practices of the Minimum Viable Utopia¹

Adam Greenfield

Urbanscale, London

1. This paper was first published as a blog entry on speedbird.wordpress.com on April 14th, 2014.

Hey there! It's been awhile since I've shouted at ya properly, and I'm going to be MIA for just a little longer yet (having stupidly locked myself into back-to-back-to-back-to-back trips to Dublin, Manchester, Aarhus & NYC, and finding myself rather burnt to the ground as a result). In the meantime, I thought I'd give you a brief idea of what I've been thinking about lately, and what kinds of questions I'll be taking up over the next few months.

I'll warn you from the outset that everything that follows is both speculative, in that it reflects hints, notions and potential trajectories more than fully coherent and robustly worked-out arguments, and overdense, in that it alludes to more lines of thought than I can properly treat at any length you'd tolerate in a blog post. Bear with me anyway and hopefully we'll get somewhere interesting together.

This year's model

More than a few of you have asked just what it is that I'm up to here at LSE. My research project is fairly open, but I think it's fair to describe it as a consideration of the perennial urbanist themes of land use, mobility and governance, as they fold back against an environment and population whose capacities and affordances are increasingly conditioned by the presence of networked computational systems. Roughly, I'm asking: given the presence of these systems, how might we use them to

(a) help allocate common spatial resources in such a way as to ensure the most socially productive use of the available space; (b) underwrite the greatest ability of all to participate personally and physically in all the circuits of exchange that constitute the city; and (c) assist communities in making wiser, more responsive and more widely agreed-upon decisions regarding these and other matters before them? And how do we do all of these things in a way that respects, supports and makes the most use of our existing competences for the city — that skillful negotiation of the world and its prospects that big-city folks have been known for since time out of mind?

Big questions, obviously, and what's (I hope) equally obvious is that I make no pretense whatsoever of essaying neutral answers to them. With regard to the first of these topics, for example, it ought to be evident that my notions of "most productive use" bear very little resemblance to the argument from revenue-generation potential that furnishes most contemporary redevelopment schemes with their primary justificatory apparatus, and which as of this writing appears to have hollowed out any hope that the so-called "sharing economy" might give rise to radically different ways of working and living together. As I'll explain in greater detail below, it's what happened to the early promise of a networked sharing economy that haunts me as I prepare to propose new

configurations for convivial systems. For all the utopian hope that may have attended their arrival, I think by now it's clear that all too many existing coworking and "maker" spaces orbit venture-financed technology startup culture too closely, badly underfulfilling their potential and reproducing conditions I have no interest in perpetuating. That I can see, they have broadly failed as alternative spaces in which we could shelter from the invidious operations of consumer-phase capital, rediscover some sense of ourselves as skilled and competent agents and reclaim responsibility for the furniture of our world. Meanwhile, other potentially transformative models, like those on which Zipcar and AirBnB are founded, seem to have been placidly, even hungrily absorbed into the extant framework of neoliberal assumption.

Signs, pointers and portents

Readers of "Against the smart city" (in Kindle or POD pamphlet editions) know that I don't place any particularly great faith in existing institutions' capacity (or willingness) to address these circumstances. I go into a fair amount of detail, in fact, to spell out just why I think the "smart city" is such a disastrously misguided conception of the role of networked information technology in our urban places and our lives. At the same time, though, I do think it's incumbent upon anyone levying such a critique to articulate at least some affirmative vision of what they would like to see happen in the world. So what do I believe more satisfying, more fructifying alternatives might look and feel like? And what do I think are some ways of using networked technologies capable of encouraging conceptions of the relation between self and society that are a little less atomic — that are, in other words, less Californian-ideological and more oriented toward commonwealth?

In the following months, I'll be sketching out at least the basic contours of a vision of urban living and working that responds to these questions. In particular, I'm interested in elaborating the outlines of a post-growth, near-steady-state industrial permaculture in city centers, autonomously and locally managed, undergirded by networked systems of deliberation, resource stewardship, mobility and exchange. This is a vision of localism in which flows of matter and energy circulate in a carefully maintained dynamic equilibrium; communities produce most of the things (and skills, and affects) they need to survive in an unstable world; and sensitive onshoring brings compact,

clean sites of precision manufacture and production back into the urban fold, undoing the supply chains of continental and oceanic scale and the ludicrous energetic, environmental and human costs they entail. We learn, once again, to work in atoms as well as bits; we do so together; and in doing so, we focus on the creation of real prosperity in the absence of economic growth. For a variety of reasons, it's important to me that I ground everything I'll be proposing in empirical observations of events and situations that have some track record of functioning successfully. As it happens, some hints of what aspects of this vision might look like in practice do crop up in three very different existing projects/processes I'm aware of: Madrid's Campo de Cebada; the Godsbanen/Institut for (x) complex, in Aarhus, Denmark; and finally a commercial enterprise called Unto This Last right here in London. Each of these sites has something to teach us, and in some ways I think of each of them as a dress rehearsal for a best-case future.

>>Figure A: *El campo del la Cedada Assembly, Madrid*

Campo de Cebada: Community control

At el Campo de Cebada, a fenced-off 60,000 sq ft lot in the heart of Madrid — formerly the site of a market, seemingly doomed to persistent vacancy by the economic crisis of 2008 — was reclaimed and transformed into a community resource by the neighborhood's residents themselves. After securing physical access, but before anything was built on the lot, a core group of local activists (including members of the Zuloark architectural collective) convened a series of weekly open assemblies, organized on bedrock principles of transparency, openness and participation. Residents and other interested parties were asked to propose, weigh and decide upon the programs, structures and activities the site should support. And so what had been more or less an abandoned site came under autonomous community control, using horizontal, leaderless processes very similar to those that proved so successful in the Occupy movement (including Occupy Sandy, as I describe here). It was under this informal and only retroactively sanctioned process of management that the space finally began to generate meaningful value for its users and neighbors. (At this point it may be worth noting that Spain has a robust history of anarchist practice, though it would also be something of a sublime understatement to point out that Madrid

was not historically the heart of this activity.) Both public assemblies and other, more casual activities on the site notably rely upon rapidly reconfigurable/demountable pallet-based furniture designed by Zuloark, similar to that Raumlabor Berlin has deployed in their pop-up public spaces in the past. (Such furniture also suggests a slow percolation of open-source hardware design and construction schemas like OpenStructures, a central theme of year-before-last's tremendous Adhocracy show.) But it would be a mistake to identify the lesson of el Campo de Cebada with its physical tokens. Like the community gardens of New York's Lower East Side, or more recently 596 Acres, what its success suggests is that ordinary, nonspecialist people are more than capable of taking on responsibility for maintenance, deconfliction and the other less glamorous aspects of administering and operating any such site, in the very core of a world city of the long-developed North — and to do so not in response to an environmental shock like Katrina or Sandy, but as a (dare I say “entrepreneurial”) way of grasping the emergent opportunities that lay curled up fractally inside the slower processes of economic calamity. What the people behind el Campo de Cebada have forged together is, in essence, an Occupation that is affirmative rather than merely critical, productive and forward-looking as well as polemical. What their experience teaches us is that we can reimagine and reconfigure the sacrifice zones left behind by the reigning calculus of land valuation, grasping and making maximum use of them as a collective resource, in a maximally inclusive way.

>>Figure B: *Institut for (x)*, Aarhus

Godsbanen/Institut for (x): Gradient of engagement

In Aarhus, my host Martin Brynskov took me for a walk around the publicly-funded Godsbanen production space/event venue, and the curious Institut for (x) that partially overlaps it. These institutions occupy a scatter of buildings lying at the end of a decommissioned rail spur that thrusts up into the heart of town, and the hour we spent walking over, around and through them began to suggest a particularly potent hybridization: autonomous self-management in the style of el Campo de Cebada, fused to the provision of standing community workshops and production facilities. To my eye, anyway, Godsbanen consists of four distinct structures or conditions: the former railyard administration building, now the offices of various public, private and non-profit groups;

a long main hall that was formerly the intermodal freight-transfer center, and now shelters the printshop, photo studio, metalshop and so on; a new infill structure (complete with vertiginously climbable roof) by 3XN, that comprises the event venue and canteen, and sinters the other buildings together; and a tumble of trailers, ad-hoc shacks, shade structures and lean-tos that apparently constitute the Institut for (x).

What was wonderful about Godsbanen was seeing men and women both — of all ages, very few of whom were obviously hipsterized — using the available wood-, metal-, clay- and textile-working facilities to make things for their own daily use. It's this deployment of emergent digital craft techniques to produce things primarily with an eye to their use value rather than their exchange value à la present-day Etsy that so excited me. But there are other ways in which Godsbanen one-ups the usual makerspace proposition. For example, the site sports a legible gradient of formality and structure, accessible at any point and traversable in either direction; you can literally see the stiff Scandinavian rectitude of the administration building decomposing into particles as you walk further down the rails, with everything that implies for uses and users. Martin pointed out that the complex supports two entirely distinct woodworking shops, one at either end of the gradient: the first (low-cost, but still pay-for-use) furnished with state-of-the-art equipment and on-site assistance, and the other, further down the yard, free but provided with somewhat older equipment and not much in the way of help/oversight. A project could germinate with two or three friends tinkering in the anarchic fringes, and move up the grade as they began to need more budget, order and privacy, or, alternately, a formal enterprise used to the comforts and constraints of the main building might hive off an experimental or exploratory activity requiring the freedom of the fringes. Either way, individual or collective undertakings are able to mature and develop inside a common framework, and avail themselves of more or less structure as needed. This is something that many self-styled incubators attempt, and very few seem to get right. The further away one walks from the main building, the greater the sense of permission granted by the apparently random distribution of objects around the central space, by the texture of these objects and their orientation. This is of course not at all random: everything you see has been selected with an eye toward

a precisely calibrated aesthetic that at times comes perilously close to favela chic, but that does send a very powerful message about the appropriability of the environment, the kinds of things people can do here and the kinds of people who can do them. (Note that this is the same message ostensibly conveyed, but actually undermined, by the “wacky,” infantilized furniture of dot-com and tech-startup offices.) This aspect of legibility, or performativity, strikes me as being nontrivially important to the success of the Godsbanen project. What fifty or more years of spectacular consumerism have left us with is the need to be seen to be doing what we do, as a performance of self, identity and affiliation. What participation in a place like Institut for (x) gives its user-constituents is a way to achieve that end without it necessarily being commodified. Citizens are making a very deliberate statement by participating here, and being seen to participate: a statement of value that remains outside the register of consumer capitalism, without necessarily being overtly, consciously or uncomplicatedly in opposition to it. My sense is that Aarhus has figured out something sensitively dependent on a whole lot of boundary conditions — something that municipalities around the planet are falling all over themselves trying to reinvent, and generally missing by a country mile. Their success has something to do, certainly, with the fact that Denmark can find funds in the public purse to support this kind of activity, and just as certainly with the fact that a coherent fabric of trust yet persists in Danish culture of the everyday. But it owes even more to some very canny spatial and social thinking. What the Aarhus experiment teaches us, among quite a few other things, are how to organize space so its legibility serves its users rather than the prerogatives of territorial control, and that many of the material things we need in life we can learn to make for ourselves.

>>Figure C: Unto This Last workshop, London

Unto This Last: Local production, training and employment

Which brings us to Unto This Last, a commercial furniture manufacturer that has been operating in London’s Brick Lane for the past thirteen years. Their product line — a reasonably wide selection of chairs, tables, beds, bookshelves and storage units — displays a total

coherence from conception all the way through design, fabrication method and setting to delivery. Each piece has been carefully designed so that it can be assembled from flat pieces cut from sheets of sustainably-grown birch plywood, by a CNC cutter right in the back of the shop. (Swing by at the right time, and you can see it in action, cutting components of the piece that you yourself will take home and weave into your life.) The shop’s ethos of “less mass, more data” rather takes the logistics-friendly Ikea flatpack concept to a new level. There are, inevitably, issues. While I personally rather like it, it’s clear that the stripped-down aesthetic (ably conveyed by the store’s iconic sign) isn’t for everyone. And ideally trees yielding wood suitable to this kind of application could be grown within the local bioregion, rather than being shipped from the (state-owned and -managed) forests of Latvia. Nevertheless, alongside other, slightly differing initiatives, like the wonderfully-named Assemble & Join, what Unto This Last teaches us is how to wrest the greatest practical, economic and (as we’ll see) social value from the minimum investment in matter and energy.

Come together

In the fusion of each of these three archetypal processes, el Campo de Cebada, Godsbanen and Unto This Last, we can see the outlines of something truly radical and terribly exciting beginning to resolve. What can be made out, gleaming in the darkness, is a — partial, incomplete, necessarily insufficient, but hugely important — way of responding to the disappearance of meaningful jobs from our cities, as well as all the baleful second-order effects that attend that disappearance.

When apologists for the technology industry trumpet the decontextualized factoid that each “tech” job ostensibly creates five new service positions as a secondary effect, what they neglect to mention is that the lion’s share of those jobs will as a matter of course prove to be the kind of insecure, short-term, benefits-lacking, at-or-close-to-minimum-wage positions that typify the contemporary service sector. This sort of employment can’t come anywhere close to the (typically unionized) industrial-sector jobs of the twentieth century in their capacity to bind a community together, either in the income and benefits they produce by way of compensation, in the conception of self and competence they generate in those who hold

A.
El campo del la Cebada Assembly, Madrid
Source: El campo de la Cebada

B.
Institut for (X), Aarhus
Source: Aarhus Kommune

C.
Unto This Last workshop, London
Source: Unto This Last, London



A.



B.



C.

them, or in the sense of solidarity with others similarly situated that they generally evoke. At the same time, though, like many others, I too believe it would be foolish to artificially inflate employment by propping up declining smokestack industries with public-sector subsidies. Why, for example, continue to maintain Detroit's automobile manufacturers on taxpayer-funded life support, when their approach to the world is so deeply retrograde, their product so very corrosive environmentally and socially, their behavior so irresponsible and their management so blitheringly, hamfistedly incompetent? That which is falling should also be pushed, surely. But that can't ethically be done until something of comparable scale has been found to replace industrial manufacturing jobs as the generator of local economic vitality and the nexus of local community. So where might meaningful, valued, value-generating employment be found — "employment" in the deepest sense of that word? I have two ways of answering that question:

– In the immediate term, I believe in the material and economic significance of digital fabrication technologies largely using free and open-source plans, deployed in small, clean, city-center workshops, under democratic community control. While these will never remotely be of a scale to replace all the vanished industrial jobs of the past, they offer us at least one favorable prospect those industrial jobs never could: the direct production of items immediately useful and valuable in one's own life. Should such workshops be organized in such a way as to offer skills training (perhaps for laid-off service-sector workers, elders or at-risk youth), they present a genuinely potent economic and social proposition. There are provisos. The Surly Urbanist correctly suggests that any positions created in such an endeavor need to be good jobs, i.e. not simply minimum-wage dronework, and my friend Rena Tom also notes that the skills training involved should be something more comprehensive than a simple set of instructions on how to run a CNC milling machine — that any such course of instruction would be most enduringly valuable if it amounted to an apprenticeship first in the manual and only later the numeric working of materials. I also want to be very clear that, per the kind of inclusive decisionmaking processes used at el Campo de Cebada, such a workshop would have to be something a community itself collectively thinks is worth experimenting with and investing in, not something inflicted upon it by guileless technoutopians from afar.

– In the fullness of time, I believe that the use of relatively high-technology techniques to accomplish not merely the local, autonomous production of everyday objects, furnitures and infrastructures, but their refit and repair, will come to be an economically salient activity in the global North. In this I see a conglomeration of several existing tendencies, logics or dynamics: the ideologically-driven retreat of the State from responsibility for stewardship of the everyday environment; the accelerating attrition and degradation of the West's dated and undermaintained infrastructures, and their concomitant need for upgrade or replacement; increasing belief in the desirability of densifying urban infill; the rising awareness in the developed world of jugaad, gambiarra and other cultures of repair, reuse and improvisation; the emergence of fabricator-enabled adaptive upcycling; the circulation of a massive stock of recyclable componentry (in the form of obsolescent structures as well as landfill-bound but effectively nondegradable consumer items), coupled to the emergence of a favorable economics of materials recovery; broader experience with and understanding of networked, horizontal and leaderless organizational structures; the creation of a robust informational commons, including repositories of freely-downloadable specifications; and finally the clear capability of online platforms to facilitate development and sharing of the necessary knowledge, maintain some degree of standardization (or at least harmonization) of practice, suggest sites where citizen repair might constitute a useful intervention, and support processes of democratic decision-making.

On forgetting to slay the dragon

Especially when they're of industrial grade, the 3D printers, laser cutters, CNC milling machines and other devices involved in digital precision manufacture are highly visible and — if you've ever seen one in operation, you know it's true — coldly glamorous, possessed of the same eerie machinic grace and certainty that makes the flight of quadcopter drones such an uncanny thing to witness. Nor are fabricated things themselves without a certain evocative power. In a dynamic we should all be familiar with by now, and deeply suspicious of, the discrete printed object is often taken as not merely a sign standing for a complex underlying process, but accepted as an unremarkable replacement and stand-in for it. Thus we see an efflorescence of on-demand mall and High Street "fab labs" apparently dedicated to

churning out novelty items of puissant symbolism, but little actual utility: personalized busts, complex gear trains that will never be connected to any other mechanism, and similar dead ends and blind alleys. I certainly do not mean to fetishize the new production. What I do mean to suggest is that we've barely taken the measure of these networked, decentralized, distributed technologies of material production as economic and social enablers. The same techniques that generated kipple of the sort I describe above have clearly already transcended the hobbyist stage, having recently been used to rapidly produce and assemble objects of architectural scale and intent. (If anything, this impressive performance was underhyped; as Fred Scharmen points out, the designers/fabricators responsible for the Shanghai development "don't have press agents, they didn't make a rendering, they didn't even post any photos or concepts until after they did it.")

But neither are the technologies themselves really the point here. In everything I suggest above, the act of production is — comparatively, and for all its many rigors — the trivially easy bit. The challenge isn't, at all, to propose the deployment of new fabrication technologies, but to deploy them in modes, configurations and assemblages that might effectively resist capture by existing logics of accumulation and exploitation, and bind them into processes generative of lasting and significant shared value. This is the infinitely harder project of weaving all of these technologies into not merely "sustainable" but actually sustained practices and communities of practice. My mistake in the past — and, in retrospect, it's an astonishingly naïve and determinist one — was to think that emergent networked forms of shared resource utilization might in themselves give rise to any particularly liberatory politics of everyday life. Experience has taught me that such notionally transformative frameworks as do arise very readily get appropriated by existing ways of valuing, doing and being; whatever "emancipatory potential" may reside in them swiftly falls before path dependency and the weight of habit, and the gesture as a whole comes to nought. This is what appears, for the time being anyway, to have fatally undermined the more interesting prospects for conceiving of space as a shared network resource, the cluster of practices I think of as treating "space as a service." Consider what's become of my original argument that the companionable coexistence of AirBnB and Couchsurfing.org implied

enough space for a (non-corporate but robustly) commercial business model and a fiercely non-commercial service model to subsist side-by-side, even as they brokered access to the same resource: fast-forward three years, and AirBnB looks more and more like a formal branch of the hospitality industry with each passing day, while Couchsurfing has — fumblingly, and much to the chagrin of its original animating community — reinvented itself as a forprofit competitor. The dynamic here puts me in mind of a thought expressed succinctly by David Harvey in his new, and excellent, book *Seventeen Contradictions and the End of Capitalism*:

„The long history of attempts to create some such alternative (by way of worker cooperatives, autogestion, worker control and more latterly solidarity economies) suggests that this strategy can meet with only limited success...If the aim of these non-capitalistic forms of labor organization is still the production of exchange values, for example, and if the capacity for private persons to appropriate the social power of money remains unchecked, then the associated workers, the solidarity economies and the centrally planned production regimes ultimately either fail or become complicit in their own self-exploitation.“

Also sobering is how very often over the past few years "disruptive innovation" in services has been attended by the worst sort of triumphalist douchery on the part of the already-privileged beneficiaries of the ostensible disruption. I think of the tellingly-named Uber, explicitly positioned as an outright celebration of the "self-made" Randian superman's differential ability to route around urban infrastructural, bureaucratic and regulatory failure, in a world where his social and economic lessers are reduced to relying on defunded, dysfunctional, all-but-dystopian public transit. Uber's self-serving rhetoric casts any regulation of their service as unwonted friction imposed by meddling rentseekers, when that fabric of regulation was for the most part woven into place for good and sufficient reason. As if these disappointments weren't enough to chasten me from making assertions about propensities and likelihoods, not too long ago Anil Bawa-Cavia (rightly, I think) poked back at something I'd said regarding the "latent and unrealized emancipatory potential" of certain technologies:

„I don't see any reason to believe that any technology has a pre-inscribed 'potential' that remains latent within it. I agree with Harman's interpretation of Latour on this point, extreme as it may be. Either entities have active affinities and relations or they don't. I see no convincing reason to believe they possess an essence in which potential may reside. So can networked technology be emancipatory? I'd like to believe so, but only acting in relation with other actors in a co-ordinated manner...I don't [therefore] think it's constructive to simply assert that this potential is latent, as it amounts to an ideological projection or political posturing. The task, then, would be to go ahead and activate these technologies by bringing them in relation to other actants in ways which might be regarded as emancipatory.“

Here the terms of what might at first blush appear to be an abstruse debate in the metaphysics of the flat ontology turn out to have important implications for the ways in which we see, describe and act in the world. Though for myself I tend to believe that all things have recourse to a broader performative repertoire than that set of relations currently enacted, I take Anil's (and Harman's, and more distantly Latour's) point: we have to actually do the work of forging some linkage between things before we can know whether that particular linkage was in fact possible. And that work is an investment, is never accomplished without some cost. So for all of these reasons, I've become wary of using that word "potential" to express my hope for the trajectories that appear to me to be latent in some emergent technosocial circumstance, but have yet to be actualized. But history nevertheless suggests that there is a marked degree of affinity between practices of material production in distributed, networked workshops, on the one hand, and politics choosing to organize themselves as a federation of autonomous local collectives managed by popular assembly on the other. If the latter seems in any wise to be a productive way of addressing some of the more vexatious challenges that afflict us, then maybe it might not be such a bad idea to experiment with the former. (Murray Bookchin gives some consideration to the organic politics

of the materially self-reliant, in contexts that include medieval northern Italy and post-Colonial New England, in *The Rise of Urbanization and the Decline of Citizenship*, which I recommend without reservation.)

Given the direct and ancillary benefits that seem likely to cascade off of locating material production capabilities of this sort in the community, it might not be such a bad idea to experiment with them in any event, regardless of your politics. My aim, in all cases, is to see if the binding power of the network can't be used to perform a kind of urban kintsugi: Expose the seams and sutures between things, articulate those seams in such a way as to improve the whole, leave the newly-rejoined fabric stronger than it had been before. What lies ahead is the costful task of attempting to verify whether this can in fact be accomplished — whether the value I suppose to subsist in this particular imagined lignment of technologies, spatial arrangements and organizational structures can actually be realized, by helping to produce real-world circumstances and situations that demonstrate it. And while there are certainly enough daunting aspects to this endeavor, and more than enough, I've rarely in my adult life been more optimistic than I find myself at this moment. It is clear to me that what we now have at hand, and ready to hand, are practices of the minimum viable utopia.

KEYNOTE RESPONSE

Vanessa Watson

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After Adam's tour de force all I'm going to do is to make some points, raise a few questions and then where we really want to get to is to open the floor for you all to take forward the debate. So let me be brief, it's you we really want to hear from.

So we recognize, I think, the ways in which the concept of smart technology has become linked to cities. Now that link wasn't inevitable but it has happened and this notion of smart cities now certainly appears to be dominating the discourse, particularly when we think about the future of our cities. The idea of smart cities quite obviously is being promoted by particular categories of people, in particular categories of interest: the companies that are promoting them are probably number one and there is a very clear reason why they are doing that, and that is profit. But also promoting the smart city idea are the politicians, city politicians in particular, and some of the larger research agencies, think tanks and so on that are fairly well funded for this kind of thinking.

So what we are finding is that the notion of smart cities is being promoted by particular kinds of people who are being linked in all sorts of interesting ways to how we talk about the city as 'world class'. The term of 'world class' has been popping up in relation to smart cities. 'Urban boosterism' is another word that has been used to describe it. So there is a connection here between technology, cities, 'world class' and 'boosterism' and we have to remember how these things are linked. And we have to be very worried about these and I agree with Adam absolutely about that. On the other hand there has also been a very strongly emerging

critique of smart cities. And this is coming out of a different group of people. Many of whom are academics, some are activists like Adam, and there are two parties going on here that are not necessarily talking to each other. We need to bring these together.

Quite a lot of the discussion has been on the extent to which smart cities are perhaps just the end of a long line of thinking about urban utopias. We can go back to a hundred years to garden cities, Le Corbusier's radiant cities, creative cities, eco cities and now smart cities. So is this just another long line in a stream of utopian thinking that may go somewhere or may not? And then if these really are utopian visions that are coming out of the smart city corner, will they ever materialize? Will they ever really happen? Or will they stay as graphics and images to tantalize us into some future that will never emerge? What do you think about this? We know there has been a very limited number of cities that have been built that are 'smart'.

So despite the incredible prevalence of smart city talk we still don't see much coming down to the ground. In my own work in the context of Africa for example we find that the word 'smart' is beginning to appear. It's beginning to work its way into the discourses of politicians who claim 'world class' through 'smart' but really when you look harder at what is happening in Africa this is no more than a disguise for property development, property developers moving into available land in African cities. That's all it really is. So we really don't have any sign yet in that part of the world of 'smart' and it may never come. So I think the first question we can talk about is: The smart city idea, is it simply

another form of utopianism or is it actually something real that is about to find its way into our cities and onto the ground?

Many of those who are debating the smart city concept point to this inevitable contrast between the messy reality of our cities on one hand - the city is everywhere if you like - and these universal models of 'smart' that gloss entirely over context, ignore context, erase context in a sense.

Smart city modeling appears to descend from the sky onto cities in all parts of the world but we really have to ask if you look at cities on the ground are the preconditions there that might accept 'smart'? Is the infrastructure there that can make it work? Are the human resources there that can become 'smart'? Are there forms of governance there that can absorb and manage 'smart' in the long term? And these all have to work to make Smart Cities happen. In my context of Africa many countries are experiencing regular daily power cuts. How does 'smart' work when there's no power supply? What do you do? Those power cuts are not going away for a long time. The backlock in terms of power supply to African cities is massive. And we are not the only part of the world experiencing that. So another question for debate I think is: Is this gap between reality and smart models so great that we only may ever see fragments of it that actually descend into our cities and start to happen and perhaps that's all that smart ever can be? I think there is also a debate about whether smart is inevitably bad. Adam's position very clearly is that it is bad but let's hear what you think about that. Can it be positive? Should we as planners, policy makers, researchers feel that we should deprive people of smart cities because we believe it might be dangerous for you? What are the governance processes that will allow smart to be implemented? Will it lead to greater democratization or less? Has anybody really thought through how these models and ideas may be implemented, may be absolutely actualized? And will the outcome be good or bad? What do you think about that? Will it begin to cause inequalities in cities that we have never seen before? Inequalities between those that have access and those that haven't? How will that play itself out? What kind of conflicts will that give rise to? Or it could be the opposite. Can it equalize? Can it democratize? What do you think? Does it skew governments attention away from some of the real basic needs in our cities? And again talking about my own context, people who need simply fresh water to drink, a toilet, a roof over

their heads. Does it skew interest and investment to something else and away from these very basic needs? And I think certainly in Africa they may do. So I would actually agree with Adam when he argues that we need to think of smart in another way. How can these technologies be used in ways that are different? Are they being used in ways that are different? Again, in African cities some 60 percent of the population of working age doesn't have a formal job. People like that are not sitting at home doing nothing. They are out working, they are selling, they are making, they are recycling, they are repairing. These kind of things happen really in a context where people can't get formal jobs. So let's look at what is happening and let's build on that!

I absolutely agree with Adam on this one. But Adam as well has cautioned us to extent about bottom-up technology and I think that is also right. That notion of hybridity of articulation between real need and technology is absolutely vital. And that means it will be different in every single place and every single city. No universal models that can simply descend from the clouds. There are also really interesting technologies that are being used by NGOs and communities and I think Adam referred to some of those that are already using tablet screen numeration, cell phones for money transfer in ways that I am sure that IBM and CISCO never imagined that it could. Can we upscale these new ideas about how to use technology? And I think we certainly can because many of these NGOs have global networks and the technology is there to share to learn, to move ideas around. So that notion of appropriate bottom-up I think is a really good one.

So where do we go with this notion of Smart City? I think everyone of us can and should be developing a position on whether or whether we don't agree with it. We have to take that stance. Whether we are citizens or professionals this is a very real set of ideas that is going to impact on all of our lives and it really is important that you take a position on this. Where do you stand on it? Where do you agree, where do you disagree? Feed that back into your political processes! It's really important that you do. What kind of city do you want? So let's open it up there for discussion.

Thank you

A.
**Day1 - Keynote discussion,
at Czech Centre**

B.
Voice from the audience

C.
**Day1 - Keynote at Czech
Centre**



A.

„ (...) Maybe there is a difference between ‘smart’ and technology, because it is always also in the hand of the users. That doesn’t mean that technology itself is dangerous but that it is depending on who is doing it. I find it coming very visible when you talked about the ideas of democracy, the commoning and how in a small group you can work together, like the Occupy Movement and in the community garden. And it reminds me of what David Harvey wrote about commoning. He talked about scale, and (...) I think the scaling of this form of democracy is one of the most important parts of it in a way. You referred to smart technology as a means of scaling the kind of direct democracy that a community garden or whatever can have. So in a way there you took yourself the same technology to solve it in a way. And I think that is nice, because that shows that technology can also do some good, hopefully. Then you came back to showing some people sitting around a table. So how can we really make a big scale? Even if we wire ourselves smartly and have a kind of democracy that doesn’t mean that it works out. (...) So how do we do that?“

B.



C.

PRODUCTION / URBANIZING THE SMART CITY

Panel 1

Alberto Vanolo

Saskia Sassen

Mark Deakin

**Introduction by
Johanna Schlaack and
Andreas Brück**

The PRODUCTION session is dedicated to the question of the production of the Smart City paradigm, the intellectual critique of the perceptions it creates and the consequences for actual city production. As an interdisciplinary group of researchers and practitioners we want to question the Smart City from two sides: from a more theoretical perspective as well as from a practical architecture and urban planning perspective.

The current debate about Smart Cities is strongly influenced by technological and application-oriented “hard” perspectives that predominantly materialize through the insertion of smart infrastructures into existing urban systems. Citizens (as individuals) and urban societies (as bodies) remain passive beneficiaries, end users or consumers – or at least are not regarded as the “software” that runs the city and gives vitality to the (smart) “hardware”. Not surprisingly, the smartification of the urban is contrasted by increasing demands made by civil society and urban social movements towards greater inclusion in decision-making: New urban actors acquire new agency through local knowledge, expertise, creativity, social networking skills and collaborative capabilities, or social entrepreneurship.

We can – and must – question the perception of the Smart City as an operationalized version of “sustainability”, but must also extract and interlink the empowering aspects within smart

technology – especially regarding the role of people. We deliberately use the term “people” rather than “citizens”, as not everyone is a citizen and our aim is to conceptualize the urban in as inclusive a manner as possible. When referring to “knowledge production” we primarily mean our role as academics, but with a very close link to professional and civil society knowledge in the field.

In 2014, Johanna Schlaack taught a course on the Smart City called “Smart Cities – between ambition and reality” in which students set up the Wiki www.smart-city.berlin. The Wiki was meant as a provocation at a time when Berlin was (it still is) developing its Smart City strategy more or less behind closed doors, ignoring many existing smart projects and initiatives. Course -participants looked at the Smart City topic through six lenses/topics: (1) sustainability/resilience, (2) utopias/historic visions, (3) smart growth/new urbanism, (4) de-growth/transition, (5) actor network theory/technology, (6) urban commons/sharing.

Finally, students produced the first German Wikipedia article on the Smart City. Its previous non-existence seemed to be an indicator of the lack of research and theory regarding this topic. Everybody talks about smartness and nearly every city is confronted with implementing Smart City strategies, but no one tries to define what it actually is about. German administration staff hardly ever speak English, so what do they do when EU-funding schemes force them into Smart City projects? They look it up on Wikipedia. Therefore, this was a straightforward attempt to productively impact the debate, to highjack the knowledge production process and transfer information. The article still exists today – virtually unchanged.

This example of student work and its production process was based on the didactic idea of collaborative collective work. We advocate this mode of operation as the fundamental principle in the making of the city of today and tomorrow. The Smart City is a cross-sectional concept (mobility, energy, communication etc.) with cross-sectoral responsibilities (private, public, and community actors). The primary aim should not be to “own” (and capitalize) the Smart City, it should rather be about collective ideas and shared processes of innovation. It should be about co-production and integration – in universities and academia but also in administration, politics, enterprises, initiatives and organizations.

On this panel we will discuss the link between the concept of the urban and the idea of the Smart City, specifically reflecting on three major questions:

(1) Is the Smart City a new paradigm or a utopia, or both?

(2) Is the Smart City essentially an urban concept and, if not, how could it become urban? Here we want to make a distinction between the urban actors that advocate the Smart City and the ones that act smart even without the according paradigm or utopian vision.

(3) Thus the main, underlying, question of the first section, adopted from Cedric Price¹, is: Smart City is the answer, but what was the question?

References:

“Smart City Wiki.” Wikia. www.smart-city.berlin. Accessed 30 Aug. 2015.

1. Cedric Price, architect (1933-2003). The original quote was the title of a lecture he gave in 1966: “Technology is the answer, but what was the question?”

Is There Anybody out There? Some Hypothesis on the Role and Position of People in Smart Cities

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Smart city projects are supposed to empower and improve the lives of people. However, the role and position of citizens is often ambiguous. While some visions of the smart city are characterised by the absence of citizen's voices, others are populated by active citizens operating as urban sensors. Furthermore, there are dystopian visions of a future in which people will be subjugated by technologies that will hamper their freedom. All these visions, however, are characterised by citizens playing a subaltern role, and arguably there is little possibility to entrust people to smart city projects in this situation.

1. Among the academic articles analysing the concept of smart city, see particularly R. Hollands (2008), 'Will the real smart city please stand up? Intelligent, progressive or entrepreneurial?', *City*, v. 12, n. 3, pp. 303-320; R. Kitchin (2015), 'Making sense of smart cities: addressing present shortcomings', *Cambridge Journal of Regions, Economy and Society*, v. 8, n. 1, pp. 131-136.

2. See for example T. Barnes and J. Duncan J. (eds) (1992), *Writing Worlds. Discourse, Text & Metaphor in the Representation of Landscape*, Routledge, London; G. Bridge and S. Watson (2003), *City imaginaries*, in G. Bridge and S. Watson (eds.), *A Companion to the City*, Blackwell, London, pp. 7-17; N. Salazar (2012), 'Tourism imaginaries: a conceptual approach', *Annals of Tourism Research*, v. 39, n. 2, pp. 863-882.

Urban imaginaries and smartness

According to mainstream discourses, the smart city is the latest and the most desirable model for the development of the cities of tomorrow. In extreme synthesis, the smart city will be a place where most of our current urban problems – from pollution to urban exclusion, from traffic to criminality – will be solved thanks to new technologies, such as sensors, smartphones, systems for the management of big data, etc.

This short text proposes a reflection on some imaginaries concerning the smart city, particularly by focusing on the role and place imagined for the inhabitants – and people more generally – within popular stereotypical ideas about smart cities. This is somehow a theoretical exercise, as the text does not propose any analysis of 'actually existing' experiments with a smart city. Rather, the paper proposes some reflections on the ways smart cities are imagined, and specifically the role of people within four smart city imaginaries.

Before presenting the analysis, it is first-ly useful to introduce the concept of spatial imaginary. In synthesis, an imaginary is an assemblage of fragments of ideas, feelings, stereotypes, fantasies, labels we associate with something, in this case, to the concept of smart city.¹ It has to be stressed that imaginaries are 'real' things that produce 'real' consequences; in the academy, this is known as the 'performativity of representations'.² For example, the more a certain area of a city is represented and stigmatised as dangerous, independently from the truth, the more people will probably start thinking that it is actually dangerous, and maybe they will start avoiding that area, making it more and more a dangerous desert. Representations somehow tend to produce the reality they represent.

In the case of the smart city imaginary, a conventional wisdom is that the smart city is the new utopia of the 21st century. But is the idea of smart city really connected to an utopian imaginary, or rather to a dystopian one? This is not a trivial question, for at least two reasons.

First, as stressed by many scholars, both within and outside urban studies, utopian thinking does not just mean ‘dreaming of impossible things’, but also thinking about alternatives, infusing hope and contribute in transforming the present.⁵

Secondly, the way we perceive our place, as people and as inhabitants of the smart city of the future, tells a lot about the kind of relationship we are developing with technology and with the daily urban space we experience in our lives. To quote an example, it has been quite unexpected for me to see Figure 1 in the European Commission’s official Digital Agenda website.⁴ Is this the kind of urban vision that people in the European Commission have in mind, which looks very much like the aesthetics of old science-fiction books?

>> *Figure A – Between futurology and science-fiction*

Exploring four urban imaginaries

Of course, there is not a single imaginary of the smart city: different people may have different ideas and different visions. In this paper, four general imaginaries are considered and analysed. These four imaginaries have to be intended as vignettes, written by the author, obtained by assembling popular ideas and diffused stereotypes about smart cities.

In this sense, it is certainly possible to hypothesise other, alternative imaginaries: the rationale of this analysis is to outline general trajectories in the stereotyping of ideas of smart urban life.

A first imaginary which lies at the basis of a number of popular discourses concerning the smart city concerns the ongoing experiment of building new smart cities ‘from scratch’, as in the cases of the hyper-technological urban spaces of Songdo (South Korea), Mazdar City (United Arab Emirates), PlanIt Valley (Portugal), etc. Surely, these cases are rather ‘exceptional’: these are not the ‘typical’ examples of smart cities, but such urban experiments are incredibly popular, sort of flagship projects and, for many people, these are the quintessence of the smart city imaginary.

This imaginary overlaps with new dangerous ideas about urbanism in the Global South, as in the case of India and the project of building 100 new smart cities.⁵ It is well known that cities in the Global South, as well as in the Global North, are often places of injustice, fragmentation and social exclusion, epitomised by the ideal-typical space of the slum. In this scenario, the smart city seems to offer a solution: a ‘new’ smart city may be built in order to solve old urban problems. But, of course, such projects run the risk of reinforcing long-standing social inequalities. It is not a coincidence that smart city projects, as well as many other modernisation projects, are coupled with the fantasy that new urban spaces are built on ‘empty land’, thereby evading public and democratic debates on mass-scale expulsions of marginalized people.

A second imaginary refers to the fantasy that technologies will lead us to a dark urban future, where totalitarian regimes will seriously hamper our freedom. This is a classic idea in science-fiction, and it is quite easy to find a number of movies and other cultural products based on this idea. This may be the case of a recent videogame named Watch Dogs.

>> *Figure B – Watchdogs: smartphones and the dystopian smart city*

The game is set in a fictional version of Chicago, where urban infrastructures and urban services are managed by a central operating system. The protagonist can use his smartphone in order to hack into various electronic devices, so that he can control urban infrastructures for his own benefit; for example, by stopping trains, raising security barriers and blacking out public lights. It is also possible to profile ordinary people walking down the street, for example detecting their incomes or the keywords they Google. This is probably the first video game explicitly set in a smart city, and it provides a clear picture of a dystopian smart city imaginary.

The example of Watch Dogs confirms that the imaginary of the smart city is often linked to fears concerning privacy, security and control.

A. **Between futurology and science-fiction**

Sources: Image acquired from Veer.com. As discussed in the text, the same image is visible in EU’s webpage <http://ec.europa.eu/digital-agenda/en/science-and-technology/emerging-technologies> – last accessed 9 June 2015. Cover of Arthur Clarke’s novel *The city and the stars* – originally published in 1956 – courtesy of Orion Books.

3. D. Harvey (2000), *Spaces of Hope*, University of California Press, Berkeley (Ca).

4. <http://ec.europa.eu/digital-agenda/en/science-and-technology/emerging-technologies>

5. <http://www.smartcitiesprojects.com/> For a critical account see A. Datta (2015), ‘A 100 smart cities, a 100 utopias’, *Dialogues in Human Geography*, v. 5, n. 1, pp. 49-53.

B. **Watchdogs: smartphones and the dystopian smart city**

Sources: courtesy ©2014 Ubisoft Entertainment. All rights reserved. Watch Dogs, Ubisoft and the Ubisoft logo are trademarks of Ubisoft Entertainment in the U.S. and/or other countries



A.



B.

Consider the case of new ‘intelligent cameras’, which are iconic elements of the imaginary landscape of smart cities: through facial recognition systems and complex algorithms, they track ‘strange’ behaviors, where ‘strangeness’ is basically defined using statistical parameters (‘deviation from the norm’, in the statistical jargon). But there are a number of different ways in which all of us may behave strangely, and you can find many examples of people who have been targeted because of intelligent cameras, or due to keyword checks of what they wrote in their emails.

A further example may refer to predictive policing, that means generating forecasts concerning the profiling of subjects and places where it is likely that crimes will occur through big data analytics. This idea greatly echoes the kind of policing described in sci-fi movies like *Minority Report*, where criminals are arrested before they actually perform their crimes, but the rationale of predictive policing is more simply to use big data analysis in order to concentrate police forces in specific urban spaces and at specific times, and results from ongoing experiments in American cities such as Memphis and Santa Barbara are quite encouraging in terms of the decrease in the number of crimes.

Of course, this may sound efficient for an urban manager, but it is dangerous from a social point of view, because it means stigmatizing and militarizing ‘dangerous’ places more and more. Consider the well-known example of Brazilian favelas. Actually, favelas are less and less interpreted as poor and marginalized areas, but are increasingly seen as dangerous areas to be surveilled and cleansed, also by the means of hybrid police-military forces, using technologies, weapons and also a language that is typical of warfare (urban blitz, raids, etc.).⁶

But are we sure that the ordinary favela inhabitants will consider the military force a solution, and not, rather, part of the favelas’ problems? And, more generally, can the dystopian space of the favela be normalized, thanks to smart city technologies and smart

interventions? In other words, will these technologies remove the fears and the stigmas associated with such places? It is curious to think that, Googling keywords such as ‘smart city’, pictures of Rio de Janeiro’s Control Center – developed in partnership with IBM – are among the most popular ones (Figure 3). Anyway, a well-known critique moved to the Control Center is that it surely allows the monitoring of the favelas, but still many areas are de facto inaccessible to police officers in case of crimes. In this vein, a meaningful hypothesis may be that the imaginary of the smart technologies will blur with the imaginary of the global slum, leading to the construction of new technological visions of technological, but still poor, fearful and dystopian, global slums.

>> *Figure C – An image of the popular IBM’s Rio Operation Center*

A third imaginary is based on a premise: a key feature of current neoliberal times is the progressive responsabilisation of citizens; for example, we are responsible for keeping on being competitive, developing our skills through lifelong learning, to separate waste, to make ethical consumption choices, etc. This is called ‘active citizenship’, and although there are many good things in this, we have to be aware that it also implies many forms of control, known in theoretical debates as ‘governmentalities’.⁷ The point here is to question what kind of active citizen is supposed to live in, and to give life to, smart cities. It is well known that the primary way in which sustainability is to be achieved within the smart city is through more efficient processes and responsive urban citizens participating in computational sensing and monitoring practices. Urban citizens become sensing nodes, or citizen-sensors.

In this vein, one of the most popular urban imaginaries refers to a city that receives feedback from its citizens’ smartphones and gathers data from sensors spread throughout the city; then, the smart city performs ‘big data’ analytics. In this way, the smart city can autonomously adjust and deliver better services in real time, for example, by changing the colours of

C.
An image of the popular IBM’s Rio Operation Center

Source: Image from the documentary movie ‘Urbanized’, Gary Hustwit, 2011, <http://www.hustwit.com> – Courtesy of the film Director

6.
See L. Wacquant (2008), ‘The militarization of urban marginality: lessons from the Brazilian metropolis’, *International Political Sociology* v. 2, n. 1, pp. 56-74; see also S. Graham (2011), *Cities Under Siege: The New Military Urbanism*, Verso, London.

7.
P. Brand, (2007), ‘Green Subjection: The Politics of Neoliberal Urban Environmental Management’, *International Journal of Urban and Regional Research*, v. 31, n. 3, pp. 616-632; see also A. Vanolo (2014), ‘Smartmentality: the smart city as disciplinary strategy’, *Urban Studies*, v. 51, n. 5, pp. 881-896.



C.

the traffic lights according to changing traffic conditions. This urban imaginary is quite appealing and it resonates with the diffused hope that technological advancements will solve most of our current urban problems. Of course, the citizen that is expected to live a smart city is digitally educated; she/he possesses a smartphone and a pc, and constantly generates data and feedback about everything in her or his daily life. Maybe one day, avoiding the use of a smartphone, or not having a Facebook, or Twitter, or LinkedIn, or Tripadvisor account will stop being somehow tolerated or even considered radically chic (as it is so among many academics I know, including myself), and it will start to be stigmatised, just like non-separating wastes or driving a highly polluting car. And maybe one day we will start using our smartphones not just for voting for the best singer in a talent show, but also for 'serious' referendums or political elections, making the smartphone the ultimate symbol of citizenship.

Finally, a fourth imaginary links smart cities with a peculiar kind of 'politics of time'. As known, the most common definition of sustainable development emphasises the needs of the future generations, implying an inter-generational conception of justice. This means taking into account the needs and the problems of 'future citizens'. However, from a theoretical point of view, this is not at all an easy task, because future citizens are not actually existing, and because their location in time, and arguably in space, too, is ambiguous. If we assume that new technologies will be the key to sustainability – an idea at the heart of the smart city imaginary – active smart citizens are needed, as discussed. But in which time? Paraphrasing the psychoanalytic language, the 'past citizens' are basically guilty, because they irresponsibly produced the development pattern that will supposedly lead to an environmental catastrophe. Past citizens are mostly invisible subjects in the smart city imaginary, i.e. they are located in a sort of sub-conscious sphere. Conversely, future citizens are undefined subjects, claiming for a generic (or 'post-political') right to live in a decent world: using the psychoanalytic metaphor, these

forces are driven by the superego, which stands outside the political. In this framework, 'actually existing' citizens are condemned to constantly trade off the welfare of now for the politics of the future. Of course, the result of this tension is frustration.

This is not the place to discuss the philosophical implications of this imaginary, but the discursive construction of the 'universal we of the present' facing the 'universal we of the future' is politically dangerous because it shadows the evident injustices characterising the citizens of today. For people struggling with poverty, malnutrition and life in insane environments, bearing the costs of the politics of the future is rather difficult, costly and unjust if compared to the wealthy people living in smart eco-friendly neighbourhoods. And it is even more unjust the fact that people living in 'dystopian' slums, carrying the stigma of 'non-smartness' and 'non-sustainability', find incredible and creative ways for coping for scarce resources, giving birth to urban lifestyles which probably are much more environmentally sustainable than those of most cities of the Global North.

Concluding remarks

The aim of this analysis of four smart city imaginaries, as anticipated at the beginning of the paper, is to reflect on the potential roles and places imagined for people. In order to develop the reflection, it is useful to refer to a very famous essay, written by the philosopher Gayatri Chakravorty Spivak, which discusses a key issue of post-colonial thinking, that is the distinction between 'speaking of' and 'speaking for' the Other.⁸ The thesis proposed here is that the four imaginaries considered in this paper speak about the citizens of smart cities, and speak in the name of them, but very little is known about people's real desires and aspirations.

The first among the four urban imaginaries considered here is basically deprived of people or, more specifically, the citizens are the quintessence of the subaltern: they are silent, blind, and arguably even 'stupid'. In fact, they need a city that may infuse them smartness. This is

8. Spivak, G. (1988), 'Can the subaltern speak?' In C. Nelson and L. Grossberg (eds.), *Marxism and the Interpretation of Culture*, University of Illinois Press, Urbana and Chicago.

evident in the project of building new cities in order to solve the current problems of people of the Global South. There is arguably little space for people's voices in this imaginary, because planners and technological gurus seem to know exactly what people desire and how to provide it to them, much in line with the approach assumed in the tradition of colonial and modernist utopian planning.

The second imaginary is dystopian, referring to popular fears connected to new technologies. At the heart of this imaginary lies arguably the fear of becoming more and more dominated by the technologies, much like the idea popularised in science-fiction movies such as *Terminator*, that technological fetishes will eventually run out-of-control, ultimately leading people to lose their voices.

The third imaginary is somehow in opposition to the first one, and it partly overlaps with the previous one. It refers to cities populated by active citizens. People apparently have a real voice in this scenario, but this is not entirely true. The agency of the active smart citizen is limited, because it is reduced to the generation of data that are manipulated, controlled and mobilised in ways that are out of control of most of people's understanding of technologies. In other words, there is the risk that we are not going to create machines that are more and more similar to humans, but rather humans who are more and more similar to machines, both in their bodies and in their behavior. Maybe citizens have a voice here, but they seem to speak metaphorically with the metallic voice of a computer.

Finally, the fourth imaginary concerns the citizens of the future and the politics of time connected to them. In this case, we have an imaginary of the smart city that resonates with a cacophony of voices and denied voices. Both the citizen of the past and the one of the future do not have voices: it is the citizen of the present who is speaking for them. And the citizen of the present, the 'universal we' of the here-and-now, is a controversial subject, because it is an ideological construction that runs the risk of

denying the contrasting voices of those suffering the injustices of today's world, for example by obliterating class differences.

Of course, these reflections do not aim at arguing that smart city projects are necessarily disempowering people and producing subaltern subjectivities. There are a number of ways people can cope with digital technologies, and even subvert them: citizens are by no means passive subjects. But, apparently, the emancipatory aspect is rather absent in smart city imaginaries. Many people probably simply think that most smart technologies are too difficult to be fully understood, and sometimes even too difficult to be used, and therefore technological subversion is out of question.

Summing up, what seems to lack in the imaginaries of the smart city is the idea of people's empowerment, and specifically the idea that smart cities will be also sort of huge agora in which people will have the possibility of having a voice. Re-incorporating people's voices into the smart city utopia means finding a credible way of imagining a relation between people and urban technologies that will be truly empowering and respectful of people's wishes and hopes. This is arguably a difficult but rather important step in order to produce a more progressive utopian thinking, and to infuse a sense of trust in people when thinking about the urban life of tomorrow.

Digitization And Work: Potentials and Challenges in Low-Wage Labor Markets¹

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1. This position paper was produced as a part of the Future of Work Project between 2013-2015. www.futureofworkinamerica.org

2. The major reasons why this matters are examined in the author's 2014 book *Expulsions: Brutality and Complexity in the Global Economy* (Cambridge, Mass: Harvard University Press/Belknap Book). An explanation of the asymmetries contained within the development of digital tools emphasized in this essay can be found in the author's 2012) "Interactions of the Technical and the Social: Digital Formations of the Powerful and the Powerless." *Information, Communication & Society*. <http://www.tandfonline.com/doi/abs/10.1080/1369118X.2012.667912#.VRrndWbx8zA>

This report examines the question of the future of work and technology through two issues. One is how digitization can enhance the work life of low-income workers by addressing the specific needs of these workers at their workspace and in their neighborhoods. Low-wage workers can gain from the development of digitized apps and tools that address their needs. The high-end worker is already a full and effective user of these technologies, and in the US, most digital applications have been geared to the middle classes and high-end workers and households. Very little has been developed to meet the needs for low-income workers, their families, and their neighborhoods. This is a bad and sad state of affairs given the needs of these workers and families. The data indicate that most of these workers and their families have access to digital apps, and are willing to spend some money on acquiring apps. We also know that access to digital apps is overwhelmingly through their phones—especially Android phones, rather than through email or iPhones—which is another constraint that leaves many low-income potential users of digital apps at a disadvantage. We need more innovations that meet the needs and constraints of low-wage workers.²

Against this set of conditions, I focus on how digital innovations can address the needs of low-wage workers, their families and

their neighborhoods. I will discuss recently developed applications geared towards low-income people and neighborhoods. But I will also examine existing or planned applications aimed, whether knowingly or de facto, at professionals, corporations, or scientists that could be adapted for use by low-income workers, families, and neighborhoods.

A second major issue I address in this report concerns an emergent complication that increasingly affects all workers. It derives from the use of semi-automated systems, which have seen particularly sharp innovations in the world of work. Such systems can generate ambiguity about responsibility when something goes wrong insofar as the worker still has a role in their deployment. In the case of factory and delivery workers, the increase in the use of robotic tools and machines can be devastating if something goes wrong since they probably don't have access to specialized lawyering if the employer does not pay for it and is in most cases the accused party anyhow. High-end workers also confront this given the sharp increase in the use of automated computer transactions of important/high-value operations that generate a similar ambiguity regarding responsibility for a mistake. But they are likely to have access to that specialized lawyering. One helpful source for in-depth discussion of this

ambiguity about responsibility (the machine or tool versus the worker using it) can be found in a series of lawsuits: these provide detailed information about how workers can easily be at the losing end of such lawsuits. But they also make visible the ambiguities of the work process and the available laws in establishing who is guilty when something goes wrong. I will briefly discuss some of these lawsuits and related issues.

Transforming The Neighborhood Into A Social Back-Up System

My argument and proposal regarding the low-wage labor market is that what would most enable low-wage workers is the extension of digitization to the larger space within which these workers operate: not only the workplace narrowly understood, but also, and very importantly, their neighborhood. While this may sound a bit extreme, it is already a fact among high-end workers: digitization has become a way of restructuring not only the workspace but also the living space of these workers. It is inconceivable today that the high-end worker can or does simply leave it all behind when closing the door of her office for the day—on those few days every week when s/he might actually work in the office. We might say the correlation for the low-wage worker is that it is a fiction that s/he can simply leave it all behind when s/he closes the door of her home and goes to work.

Digitization can help transform the neighborhood into a social back-up system. The home and the neighborhood have long been support spaces for the working class. Today, the workspace and the neighborhood are underperforming when it comes to support, mostly due to changes in the condition of low-wage workers. Digitization can help rebuild some strength in these spaces. For instance, in case of trouble (a sick child of a parent who is at work, police violence, etc.) a digital application on all neighborhood residents' phones can be a call for quick deployment of neighbors, grandmothers, hair dressers, shop-keepers, and other somewhat stationary people. This can also become a first step in a trajectory towards greater neighborhood integration and expanded use of diverse digital capabilities.

Two key assumptions organize my analysis.

One is that the lack of digital apps that meet the needs of low-income workers and neighborhoods is an added disadvantage for low-wage workers, their families and their neighborhoods. For instance, it reduces their capacity to connect promptly the three of domains of their lives (work, family, neighborhood) when needed. Low-wage workers have their phones, but a telephone call is far more visible at the workplace (and likely to be seen as invasive by the boss) than clicking on an app on their phones: it will do the work of communicating if the neighborhood is part of a network. In contrast we know that high-end workers (especially if they have small children) have video-links to stay connected to their homes and nannies.

The second is that the sense of self worth of workers can be enhanced by recognition from a larger social context, notably the neighborhood, and that this in turn has positive effects regarding collective initiatives at the workplace and in the neighborhood. One feature that matters is the possibility of mobilizing the neighborhoods as an active space that functions beyond the workplace : a space of support in case of a health crisis with a child, for organizing a union strike, for making (as in urban agriculture, craft work, etc.). The activated neighborhood can enhance workers' sense of the worth of what they contribute to the neighborhood and to the larger society. High-end workers have long been praised for their contributions to society. But low-wage workers lack such recognition, so their community should generate it.

The Underutilization Of Digital Tools And Apps In Low-Income Neighborhoods

I begin by focusing on the underutilization of digitization in the larger life-space of low-wage workers: a subject that we must address but has thus far received little attention. In contrast digitization at the workplace has been the subject of much research and attention for well over a decade.³

I see this as a sharp contrast with the intense use of digitization in the work and life space of high-end workers. To remind us of familiar numbers let me quote this 2014 article.⁴

3. This is not a new subject when it comes to the domain of work, see e.g. Freeman 2002; Autor, et al. 1998; Ellison 2004; Fountain 2005; for early studies on the social side see e.g., Haythornthwaite and Weldman 2002; Ellison 2004.

4. These numbers have probably further increased for high-end workers, but less so if at all for low-income workers.

5. Thus Richard Freeman finds that when the internet took off it helped workers seeking to mobilize support: (p.25) “This union is able to survive even though the probability of getting a collective agreement from IBM in the US is minimal because the Web offers it a low cost way to connect with IBM workers and the general public.”

“In total, 30 million Americans work from home at least once each week, which will increase by 63% in the next five years. About 3 million Americans never go to an office and 54% are happier working from home than in an office. Furthermore, 70% of employees work from alternative locations (not just home) on a regular basis.”

The key aspect that concerns me here is that this digital under-utilization constructs a radical differentiation between work space and life-space (i.e. the neighborhood) for low-wage workers. This is disabling and adds to the difficulties in their daily life at work and off work.⁵ Neighborhood is here used as a somewhat generic term to capture a fairly large local area with reasonable transport and generally modest socio-economic standing of households.

The question then is what can we do with current technologies but are not doing because of diverse reasons: lack of resources, lack of motivation, lack of interest in low-income households, individuals and localities, and so on. Important to this report, and too often overlooked, is that the types of digital applications that are being developed mostly do not address the needs/limited resources of low-income workers, their households, and their neighborhoods.

This is an especially unacceptable situation because data from diverse sources shows that low-income individuals in the US are users of digitized devices, most especially through mobile telephones, and then particularly Android models. In one of their recent overviews, the Pew Center found that 45% of households living with less than \$30K per year and 39% of those living on \$30K - \$50K use mobile phones as their primary way to access the internet. Email at home is rare. In a larger investigation on digital technology use by women across the world that I prepared for the United Nations Development Program, I found extensive use of mobile telephones by modest-income and poor women in poor areas of Africa: the mobile phone is what allowed these women to run their businesses, which were mostly diverse types of small-scale trading.

It is becoming increasingly clear that low-income households and low-income workers need mobile-friendly products. The use of web solutions is at this time limited, in contrast to what is the case for high-end workers both at the workplace and at home. The available evidence shows that music and other entertainment apps are the most used by low-income individuals or members of low-income households: these are standardized mass markets to which all consumers are welcome, including low-income buyers. But most available apps and most of the new apps coming online are geared to the middle classes, not to low-income individuals, households or neighborhoods. For instance, there are long lists of apps for contacting or finding spas, high-end restaurants, and a long list of other such pricey luxuries. But there are few if any apps that give you information about a healthy food shop in a modest-to-poor income area in a city. In short, what is absent is applications that address the needs of low-income individuals and households.

Useful Apps For Low-Income Workers And Neighborhoods

Several efforts are beginning to address some of these needs. Here are a few examples of mostly recent applications geared to modest-to-low-income households and neighborhoods. Kininvolved is an application for teachers and after school program leaders that makes it easy for them to connect to parents in case of a student's lateness or absenteeism. In many of our schools in poor neighborhoods lack or difficulty of communication between the school and a student's home has allowed self-destructive conduct to worsen, damaging a student's chances for a job or acceptance to college. This app is simple and straightforward: when a teacher, or a coach, or whoever is part of the student's adult network at school, takes attendance or sees something of concern, the family is immediately notified via text messages or email updates—whichever they prefer. The low-income worker knows that if there is trouble s/he will be alerted.

Another app, developed by Propel, simplifies applying for government services, a notoriously

time-consuming process. Now there is the option of a simple mobile enrollment application. Yet another such application is Neat Streak, which lets home cleaners communicate with clients in a quick non-obtrusive way. There is also a money management app for mobiles which combines cash and loans requests, again simplifying the lives of very low-income people who need to cash their pay checks before pay-day, and can avoid the high interest rates charged by so called “pay-day sharks.” But as yet there are few such applications of use to modest-income workers and households, compared with what is available in the high-end consumer sector.

A very different type of app from the aforementioned, far more complex and encompassing is Panoply (presented by Robert Morris): an online intervention that replaces typical therapy involving a health professional with a crowd-sourced response to individuals with anxiety and depression. What I find significant here is that it has the added effect of mobilizing a network of people, which may be one step in a larger trajectory of support that can also become a local neighborhood network. Panoply coordinates support from crowd workers and unpaid volunteers, all of whom are trained on demand, as needed. Panoply incorporates recent advances in crowdsourcing and human computation enabling timely feedback and quality vetting. “The therapeutic approach behind this system is inspired by research from the fields of emotion regulation, cognitive neuroscience, and clinical psychology, and hinges primarily on the concept of cognitive reappraisal.” Crowds are recruited to help users think more flexibly and objectively about stressful events. Another useful tool seeks to develop new ways of working together online (Aragon et al.). This is something quite common among middle class users and in certain professional jobs, but far less likely among low-income workers. And while it is not necessarily aimed at low-income workers and families, it could be extremely useful to the latter. It can enable a sense of individual worth to a network, and thereby solidarity and mobilization around issues of concern to low-income neighborhoods, families,

and workers. Again, it can feed into individual worth (“I matter to my community”) and a sense of collective strength. I would also highlight here tools for sex workers, enabling them to move online and gain strength through sharing information, and possibly organizing (see, e.g., Melissa Gira Grant, *The Red Light and the Cloud*).

Then there are, of course, the fancier apps aimed at scientists or corporations, but these should also become part of the tools (and experiences!) of low-income workers and neighborhoods. Here is one that might well be great also for immigrants who have dear ones far away but need/want to be part of their education broadly understood. For instance, take a Filipino mother who is working as a nurse or a domestic worker here in the US, and has her children at home, a very common fact. An MIT Media Lab project (*The Communication Of The Future Is So Real You Can Touch It*) aims at going well beyond the currently remote communication options by mobilizing one’s sensorial response. Currently, remote communication (including that done in working environments) is an elementary, and in that sense, incomplete experience. The app aims at experiencing “...a faraway friend’s footsteps walking alongside me as we share an afternoon stroll. Different streams of interface broaden our meaning of a physical world,” (Hiroshi Roshi) (see also the installation *Mirror Fugue*).

An important long-distance option—though not as far away as the above example—is of course, telemedicine, which for low-wage workers with constraints to their mobility given little home support, can be a major help. Or it can be used to argue the mobility constraints of low-wage workers, who may lack full time nannies, and may have elderly living at home, all of which reduces their options of leaving home (Taly Sharon and Ariel Frank, *Utilizing Multimedia Technologies for Interactive Telesonography*).

Apps That Can Strengthen The Collective Space

A second vector that I think should become part of the experience of low-wage workers is a sense of their worth in a general societal sense.

High-end workers often are praised for adding value to our economies, for their intelligence and capacity to do complex work, and so on—recognitions, by the way, that are not necessarily always warranted. Low-wage workers should also be recognized as mattering for the larger social good. This has long been one of my research questions. Every epoch and every sector contains its own answers to this question.

There are diverse ways in which the worth of these workers as individuals can become a sort of collective good—meaningful to the workers themselves and to a larger community. One aspect that has long interested me is how even the poorest communities or groups of workers add to the public good and can experience themselves as adding to the public good.

The Netherlands provides a good example of such recognition of worth. Its health system is based on the principle of universal care. It includes a neighborhood system as a key part of the medical apparatus. When a patient can go back home but still needs care, the immediate neighborhood is promptly alerted and designated residents (who have time, and are not ill) organize themselves to ensure 24-hour oversight: the patient will at all times be able to use a simple app to call on the neighborhood care-givers, and the latter will also make regular visits. All these care givers, but also the whole neighborhood, are recognized as being a sort of public actor contributing to the public good. Positive neighborhood effects are a long-standing aspiration. Much of that was eventually lost. But it also always recurs. Thus fifteen years ago, Bailyn et al. (2001 pp. 47-48), once again emphasized its importance. Let me quote at length:

“Communities have not been a large part of the thinking about work-family issues. Employees are viewed as being either “at work” or “at home,” as if there were no larger context of social relationships and institutions outside of the family to which households and individuals belong. But it is the very “embeddedness”—or lack of embeddedness—of families and individual family members in specific communities that may determine whether employees can

successfully negotiate the worlds of work and family. Similarly, it may be the embeddedness, or lack of it, of businesses in the communities in which they are located that determines their success in recruiting and retaining workers, and in selling their services or products. Employers and members of their workforces must acknowledge and contribute to the communities of which they are a part. The quality of community life is important to the survival of both employers and employees, and communities need the involvement of both to build and strengthen their capacity to offer livable environments for all.”

This signals that the neighborhood can expand the knowledge space of one’s work life. Key components of the neighborhood work space we can think of are, among others, the use of digital technologies to work at home, to make what we now buy, to design for one’s use or for sale. And it would make out of the neighborhood an interconnected space enabled by apps that are designed with low-income neighborhoods in mind. The key image is that even modest neighborhoods and modest-earning workers are immersed in spaces that collectivize specific needs of neighborhood residents.

New Challenges That Call For Neighborhood Collective Action

There are a range of trends that we can discern which signal a growing importance of the neighborhood for work along with a high risk of bi-modal income distributions—high incomes for some workers and low-incomes for others. Online work is an example. While a good share of online work is high-level professional, much online work is at risk of becoming a zone for exploiting workers. It is in my view a key focus to ensure low-wage workers have a productive workplace and living space.

Much of the writing about this is uncritical, which I find problematic. It emphasizes the advantages for employers and overlooks workers’ low wages and lack of protections. For example, in an overview of the growth of work online, Houlne and Maxwell (2013: ch 2) write:

“Professionals who want to thrive in this new environment have to think differently. The online virtual-work market reached more than \$1 billion in 2012 alone, and it’s predicted that a massive one-third of the global workforce could be hired online by 2020. Some reports argue that it could be as high as 50% of the global workforce.”

In a blog article Elena Kvochko (2014) refers to data showing that:

“...employers are bullish on online freelancers. Nearly 85 percent of businesses that use online jobs marketplaces say that hiring online gives them advantages over their competition, and almost three-quarters report they intend to hire more online. By tapping into online freelance pools, employers transcend geographical boundaries and bypass many employment restrictions.”

The challenge is going to be to avoid a race to the bottom. The neighborhoods, or equivalent spaces, need to become spaces where the fact that workers can work from home becomes a positive both for the workers and for the neighborhoods. It will take a certain type of collective action, with mutual support rather than falling into the horrors of competing for increasingly low paid online work and therewith sowing mistrust in the neighborhood. The neighborhood should function as a tool for collectivizing—in the same way that a large firm can become a ground for collectivizing workers demands. For online workers, the neighborhood becomes the equivalent space. But this can only happen if the neighborhood is a space for connecting, collaborating, and mutually recognizing each other—in short a space where networking and collectivizing can strengthen the neighborhood and hence the bargaining power of online workers. In their blog article about the globalizing internet-based world of work, Waters and Kuchler (2014) get at this possibility of workers collectivizing their struggle:

“The spread of mobile devices is forcing deeper changes, particularly in the way groups of workers communicate and share information. The result has been a deeper challenge to Microsoft’s grip on the software of working life.”

Who Is Responsible When A Digitized Process Goes Wrong

The concern here is that low-income workers are likely to experience additional vulnerabilities if there is a breakdown in a (partly) automated production process. Here I present a few cases that illustrate a range of possible complications.

A first case (Edeh v. Equifax, U.S Court of Appeals, 8th Circuit) concerns the use of an automated process to determine that a credit card balance had not been paid. The evidence outside the automated system showed that the system had failed and was in error. But the sitting party (i.e. the boss or supervisor) refused to deviate from the decisions produced by the automated system process even when confronted with evidence outside of the automated process.

“In this action, Edeh contends that Equifax repeatedly failed to conduct a reasonable reinvestigation into his consumer credit file that included an unpaid balance on his Capital One credit card account (“the Account”). Despite Edeh’s detailed, specific disputes which were corroborated by supporting documentations, including paid-in-full letters from Capital One, cancelled check, and Wells Fargo bank account statement, Equifax would not perform a reasonable investigation and instead relied exclusively on its automated dispute process.”

The decision in this case supported the plaintiff against the automated system.⁶ But it indicates in a brutally simple way how far willfulness can be justified by invoking a technological capacity that can easily be seen as superior to a “lowly” worker. The implications are worrisome, and we need digital apps that can engage this type of case at the workplace, where the evidence is often not based on documentation by a third institution as in this case.

Here is another case where an automated system is given status over a person. Bank of America made a series of automated calls (determined through an automated schedule-making process) to a couple that had late payments on their mortgage.

6. Samuel EDEH, Plaintiff-Appellant, v. EQUIFAX INFORMATION SERVICES LLC, Defendant-Appellee., 2013 WL 6158623 (C.A.8) Citing Safeco Ins. Co. of Am. v. Burr, 551 U.S. 47, 127 S. Ct. 2201, 167 L. Ed. 2d 1045 (2007)

7. Couple Wins \$1M Suit Against Major Bank for 'Outrageous' Robocall Harassment (ABC News)

8. For information and cases see <https://search.yahoo.com/yhs/search?p=iDecide%3A+the+legal+implications+of+automated+decision-making+in+the+digital+era&ei=UTF-8&hspar=mozilla&hsimp=yhs-001>

This case shows an interesting option: taking the Bank to court for its harassment through robocalls. The couple was able to collect money for damages after winning a harassment suit.⁷ Again, low-income workers might not be able to take Bank of America, and such, to court.

There is clearly a broad range of issues raised by this type of reliance on the digitizing of bureaucratic tasks and accountability. Perry and Smith provide a useful overview on the legal implications of automated decision-making.⁸ Here is a quote that captures some of this:

“Is the concept of delegation appropriately used in this context at all? After all, unlike human delegates, a computer programme can never truly be said to act independently of its programmer or the relevant government agency? What if a computer process determines some, but not all, of the elements of the administrative decision? Should the determination of those elements be treated as the subject of separate decisions from those elements determined by the human decision-maker?”

In her book on Accountability in a Computerized Society, Helen Nissenbaum, gives us a more technical analysis into the same question. She addresses the issue of “many hands” which is discussed in much of the literature about accountability as it relates to new technology. She concludes that it is difficult to pinpoint one particular agent for responsibility when so many are involved. Is the software engineer culpable? Is it the low-level employee who inputs data into the digitized decision-making processor?

“This obscuring of accountability can come about in different ways. In some cases, it may be the result of intentional planning, a conscious means applied by the leaders of an organization to avoid responsibility for negative outcomes, or it may be an unintended consequence of a hierarchical management in which individuals with the greatest decision-making powers are only distantly related to the causal outcome of their decisions. Whatever the reason, the upshot is that victims and those who represent them, are left without knowing at whom to point a finger.

It may not be clear even to the members of the collective itself who is accountable. The problem of many hands is not unique to computing but plagues other technologies, big business, government, and the military.”

Focusing on the interface design, Mary L. Cummings, argues that, indeed, digitized systems do create a kind of moral buffer between the system operator and the results of the decision, so these types of interfaces (especially where there is a greater chance for harm) should be assumed and accounted for in the design of the decision-making software.

Because of the diminishment of accountability that can result from interactions with computers and automation, I find that some sort of compartmentalization should be inserted when developing a human computer interface for any system that has the ability to harm people (such as interfaces for weapons and medical interfaces). The aim is a „moral buffer,“ a form of distancing and compartmentalization which allows people to morally and ethically distance themselves from their actions. The concept of moral buffering is related to but not the same as Bandura’s (2002) idea of moral disengagement where people disengage from moral self-censure in order to engage in reprehensible conduct. A moral buffer adds an additional layer of ambiguity and possible diminishment of accountability and responsibility through an artifact or process, such as a computer interface or automated recommendations. Moral buffers can be the conduits for moral disengagement, which is precisely the reason for the need to examine ethical issues in interface design.

I conclude with a quote from Eric Marsden’s Control and Accountability in Highly Automated Systems, where he describes why accountability should possibly be diminished when digitized decision-making processes are used:

“Automation of decision-making functions may reduce the operator’s awareness of the system state and of changes to the environment. Humans tend to be less aware of changes in environmental or system states when those changes are under the control of another agent—whether that agent is automation or another human [...].”

Clearly, we are entering an era where many of these ambiguities will have to be addressed. The risk is that the interests of corporations and other powerful actors shape the laws and the criteria for accountability. Low-wage workers will have to find the spaces of collective action from which they can hope to fight to protect their basic rights. There are others—the legislature, online spaces. The space of the neighborhood is one of those spaces—it may provide the ground level for neighborhoods to organize collectively online.

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Smart Cities: the state-of-the-art and governance challenge¹

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Reflecting on the governance of smart cities, the state-of-the-art this paper advances offers a critique of recent City Ranking and Future Internet accounts of their development. Armed with these critical insights, it goes on to explain smart cities in terms of the social networks, cultural attributes and environmental capacities, vis-a-vis, vital ecologies of the intellectual capital, wealth creation and standards of participatory governance regulating their development.

The Triple Helix model which the paper advances to explain these performances in turn suggests that cities are smart when the ICTs of future internet developments successfully embed the networks society needs for them to not only generate intellectual capital, or create wealth, but cultivate the environmental capacity, ecology and vitality of those spaces which the direct democracy of their participatory governance open up, add value to and construct.

¹
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This paper takes the opportunity to reflect upon the concerns surrounding the governance of smart city developments. In particular, the suggestion from Hollands (2008) that such issues have more to do with cities meeting the corporate needs of marketing campaigns, than the participatory governance which is required for them to be smart. Working on the assumption any attempt to overcome such concerns means shifting attention away from the needs of the market and towards the direct democracy of a participatory governance, this paper begins to address such matters by developing a more critically-insightful understanding of the subject.

In developing such an understanding, the paper bases this process of knowledge production not on conjecture surrounding either “Smart City Ranking”, or the “Future Internet” accounts of their development, but legacy of research

carried out into the informational basis of the communication systems smart cities embed. That legacy which in turn leads away from the competitiveness of Smart City Ranking and business logic of Future Internet development and towards an examination of the social capital, not only critical in underpinning the informational basis of their communication systems, but insightful in revealing the wider cultural and environmental significance of the intelligence supporting the creation of wealth.

In cutting across the social capital, cultural attributes and environmental capacities of smart cities, the representation that surfaces from this Triple Helix inspired account differs markedly from those advanced either by the Smart City Ranking, or Future Internet versions of their development.

In this respect, the Triple Helix inspired account of smart cities advanced in this paper argues that such “ranking” and “internet” centred explanations are insufficiently grounded in the intelligence which not only underlies their process of wealth creation, but that also surfaces to regulate the standards by which communities participate in the governance of such developments.

These are the governance challenges this paper examines, because they represent the top level issues to be bottomed out, either by way of accounting for the intelligence smart cities embed, or through an examination of the innovation systems they found. In particular, the intelligence they embed and innovation this finds, not on the basis of any Smart City Ranking, or Future Internet development, but in relation to the creative attributes and environmental capacities of a modified Triple Helix Model.

State-of-the-art

The state-of-the-art on these governance challenges has already been extensively reviewed by Deakin (2013, 2014) as a retrospective on the research undertaken, reported on and disseminated under the SmartCities project (<http://www.smartcities.info/>). This review of the literature identifies three emerging accounts of the governance challenges surrounding smart cities. Listing them chronologically, they account for them by way of: Smart City Rankings, Future Internet developments and through a Triple Helix Model of smart cities. They all claim to capture something significant about the governance challenges and offer insightful accounts of smart cities.

Smart-city-rankings

For Giffinger et al. (2008) smart city rankings offer the means for cities to market their attributes and use such performance indices as a means to “outsmart” one another. In this examination of smart cities, standard city ranking procedures are recast by prefixing terms like: economy, people, governance, mobility, environment and living with the word smart and attaching a set of indicators to account for their factor performances. These factor performances include hard and soft attributes, such

as: innovative spirit, entrepreneurialism, economic image and trademarks, creativity, cosmopolitanism and open mindedness. Hard and soft attributes Giffinger et al. (2008:4) suggest offer a measure of “smartness” because they: imply the implicit or explicit ambition/intention [for the city] to improve its performance”.

As a clear example of what Hollands (2008: 302-306) refers to as: measures that do more to meet the corporate needs of leading marketing campaigns, than the social, cultural and environmental requirements of their citizens, this is not a line of enquiry those with a particular interest in the governance challenge smart cities pose take further. For putting the questions surrounding the “complex causalities of such factors” (Giffinger et al. 2008:13) aside and in particular, their specific weightings; those seeking a critically informed understanding of such performances prefer instead to begin with the more insightful definition of smart cities offered by Caragliu et al. (2011: 70). That definition which suggests a city may only claim any such status, not when it performs as a smart economy, with smart people and a smart governance system, but:

“when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory government.”

As those advocating Future Internet accounts note, while still performance-based this definition is particularly valuable for the simple reason its holistic nature nicely balances the different social, cultural and economic components of smart city developments, without pre-judging either the weight or significance of any specific component. Perhaps more significantly, it also serves to emphasise the role ICT-related developments play in sustaining economic recovery, underpinning social welfare and supporting cultural health and well-being, by highlighting the Internet as an enabler of participatory government.

Given these qualities do offer a critical insight into the “complex causalities of such factors”, it

is perhaps not surprising to learn that it is this less directly competitive and more socially-inclusive, cum cultural and environmental definition, which is also adopted by those advocating a Triple Helix inspired account of smart city developments. This is because as a normative statement, the purposeful and action-oriented nature of the definition also goes some way to overcome one of the methodological ambiguities of the Smart City Ranking approach: in short; the real possibility that any such performance may be the result of actions which are only “implicitly” related to these developments and not the outcome of some consciously pursued strategy.

This ambiguity is particularly significant with the Smart Cities Ranking System as many of the cities which perform well do not either market themselves as smart, or have the corporate strategies to support any such claim. The ambiguity of this ranking tends to suggest: “smartness” isn’t only something which it is difficult to provide an acceptable performance-based definition of, but also offer an explanation for, even by those cities that are awarded such a status. This in turn resulting in the unfortunate situation whereby the “smartness of cities” is represented as something which to some extent is unintelligible and a state-of-being that lies beyond reason.

In contrast to this, Future Internet and Triple Helix-inspired accounts both assume that it is possible to know what “being smart” means, be conscious of the attributes and capacities which grant cities such a status, learn from these developments and share the critical insights they offer with others. This is because they understand such developments to be the product of innovations within existing system(s) that are intelligible in the sense which they are purposefully designed to achieve such a status, both by way of and through a pre-conceived set of actions standing to reason.

Future Internet developments

The Future Internet thesis is advanced by Schaffers et al. (2011) and Komninos et al. (2013). In setting this out, Schaffers et al. (2011: 431) propose:

“Cities nowadays face complex challenges to meet objectives regarding socio-economic development and quality of life. The concept of “smart cities” is a response to these challenges. [We] explore “smart cities” as environments of open and user-driven innovation for experimenting and validating Future Internet-enabled services. Based on an analysis of the current landscape of smart city pilot programmes, Future Internet experimentally-driven research and projects in the domain of Living Labs, common resources regarding research and innovation, can be identified that can be shared in open innovation environments. Effectively sharing these common resources for the purpose of establishing urban and regional innovation ecosystems requires sustainable partnerships and cooperation strategies among the main stakeholders”.

As Schaffers et al. (2011) go on to state, the first task that cities must address in becoming smart is to cultivate a rich environment of broadband networks which support digital applications.

This includes the following:

- > the development of broadband infrastructure combining cable, optical fibre and wireless networks, offering high connectivity and bandwidth to citizens and organisations located in the city;
- > the enrichment of the physical space and infrastructures of cities with embedded systems, smart devices, sensors, and actuators, offering real-time data management, alerts and information processing.

As Schaffers et al. (2011) go on to stress, the creation of applications enabling data collection and processing, web-based collaboration and collective intelligence in cloud computing and the emerging Internet of Things, is the first task to consider. This is because for Schaffers et al. (2011) these are the only technologies that can assure economies of scale in infrastructure provision, standardisation of applications and turn-key solutions. The second task they identify is that of initiating large-scale innovation processes for the creation of applications able to run with and improve every sector of activity, city cluster and infrastructure. Here all city activities and utilities are characterised as innovation ecosystems where citizens and organisations participate in the development,

supply and consumption of resources. As they point out, in creating this rich environment for initiating large-scale innovation, two different layers of collaboration come into play. The first layer relates to collaboration within the innovation process, which is understood as ongoing interaction between research, technology and application development. The second layer concerns collaboration at the territorial level, driven by urban and regional development policies that aim to strengthen innovation. That layer of territorial collaboration which Komninos et al. (2013) suggest builds on Porter's (1990) concept of national competitive advantage and begins to assemble the innovation systems associated with the mode 2 thinking Freeman (1995) develops.

>>Figure A: Smart city value creation and innovation system

Following this line of reasoning, Komninos et al. (2013) propose the urban value creation system advocated by the European Network of Living Labs (ENoLL), can be considered as being shaped by four determinants:

- > physical and immaterial infrastructure;
- > networks and collaboration;
- > entrepreneurial climate and business networks;
- > demand for services and availability of advanced end-users.

This value creation in turn translates into the innovation system set out in Figure A.

The Triple Helix Model of smart cities

The basis for this account is set out by Leydesdorff and Deakin (2011) in their paper on the Triple Helix of smart cities. This brings to light how the Triple Helix model of smart cities provides the opportunity to study the knowledge base of communities in terms of civil society's support for the cultural and environmental development of their innovation systems (also, see Deakin and Leydesdorff, 2013).

The schema

In this schema, cities are considered to be densities in networks among at least three relevant dynamics: that is, in the intellectual capital of

universities, industry of wealth creation and the participatory governance of the democratic system which forms the rule of law. The effects of these interactions are in turn understood to generate spaces where the informational basis of communication systems are exploited to bootstrap the notion of smart cities and exploit the opportunities Future Internet developments offer to not only generate intellectual capital, but create wealth. That is to say, generate intellectual capital and create wealth as much from the cultural attributes and environmental capacities of knowledge production, as the economic transactions which in turn relate such ICT-related developments to their emerging regional innovation systems.

This captures what perhaps best distinguishes Future Internet accounts of smart cities from Triple Helix Models of their development. In the sense that: while Future Internet accounts are content to account for the economic attributes and capacities of ICT-related developments, advocates of the Triple Helix Model seek to involve the cultural attributes and environmental capacities in any explanation of smart city development. This is not to suggest advocates of the Triple Helix currently offer a particularly insightful account of what cultural and environmental attributes contribute to the governance of such ICT-related developments. For while the Triple Helix is the only model which is explicit about the incorporation of governance-related issues into any such system of knowledge production, accounts of the schema offered by Etzkowitz (2002, 2008) tend to restrict such accounts to the rule of law and standards this lays down for the regulation of intellectual property rights.

Governance

It is in the interests of loosening the tight grip which the rule of law currently has over the Triple Helix and switching attention towards policy, corporate strategy and leadership, that what follows reviews the whole question of governance in the model's dynamics (Deakin, 2010a, Deakin, 2010b). The outcome of this reflection is captured in the following quote from Leydesdorff and Deakin (2011: 61) and in relation to the governance issues surrounding their neo-evolutionary model of smart cities.

That is in terms of the policies, corporate strategies and academic leadership surrounding the governance of cities and whose intellectual capital is founded on a process of wealth creation which is smart because it rests on a participatory governance. As they state:

“The capacity to process this transition reflexively, that is, in terms of translations, [in this instance, from creative, to intelligent and as part of the transition to smart cities] marks this development as something which takes us beyond the dismantling of national systems and construction of regional advantages. Using this neo-evolutionary perspective of the Triple Helix model, it can be appreciated that cultural development, however liberal and potentially free, is not a spontaneous product of market economies, but the outcome of policies, academic leadership qualities, and corporate strategies, all of which need to be carefully constructed, pieced together, and articulated before management can govern over them”.

It is the construction of these policies, academic leadership qualities and corporate strategies that Lombardi et al. (2011) explores with regards to the 4 visions of smart cities drawn from the “Urban Europe” Joint Programme Initiatives (Nijkamp and Kourtik, 2011). As Lombardi and Giordano (2012) state, these policy visions are of the:

- > Connected City (smart logistic & sustainable mobility)
- > Entrepreneurial City (economic vitality)
- > Liveable City (ecological sustainability)
- > Pioneer City (social capital & participatory governance)

It is Cruickshank (2011) and Deakin (2011) who take these policy visions further. This is achieved by developing an operational model of smart cities, whose Triple Helix is based on the social capital of the pioneer city, networking of the intelligence this generates, wealth it creates and in turn cultivates as an environment for participatory governance.

Unlike earlier versions of the Triple Helix, the pioneering version of the model set out

in Figure B, does not rest on the configurative logic of any “overlapping” interests between university, industry and government. This version of the Triple Helix is instead based on the informational basis of the communication system emerging from the reflexivity of smart cities and stabilisation their development offers. For unlike existing representations of the Triple Helix, the trans-national regime of knowledge production, intellectual capital and wealth creation this model is founded on, does not rest with the distinction between either the fundamental or strategic research of scientific and technical development, but instead with the informational basis and communication systems of the so-called “third mission” agenda. That third mission agenda which is Government-led and like University and Industry targets the generation of intellectual capital and creation of wealth, but not in this instance from either scientific, or technical innovations, but rather from the social networks, cultural attributes and environmental capacities that have tended to fall out with the fundamental and strategic concerns which pre-occupy their counterparts.

The reason for this focus on the government-led third mission research agenda is simple. It is because:

- > a study of the intellectual capital published as academic papers by scientific and technical communities in Vancouver, Edinburgh and Glasgow, revealed there to be no direct relationship between either the fundamental or strategic research of these pioneer cities and those which do not claim to be smart (Leydesdorff and Deakin, 2011).
- > an analysis of patents registered by universities and industry in a further 13 cities in the North Sea region, also found there to be no direct relationship between those claiming to be smart and others which choose not to define themselves in such terms (see Lombardi et al. 2011).

Together such findings suggest that in their current state, cities which claim to be smart fail the primarily and secondary tests traditionally

applied to measure the intensity of knowledge production: namely underlying scientific and technical publications and supporting patent registrations. The absence of such measures in turn tending to suggest any explanation for the development of smart cities is not to be found in either fundamental or strategic accounts of their innovation systems, but elsewhere.

In the interest of searching out this “elsewhere”, the following turns attention away from scientific and technological-based accounts of such ICT-related developments and instead towards the intellectual capital of social networks, whose underlying cultural attributes and environmental capacities surface as the third mission agenda of this government-led process venture into wealth creation. That agenda, which up till now, has been of little interest to either University, or Industry, because the prevailing academic wisdom has considered the cultural and environmental value of this third mission (into networks, attributes and capacities) to be a venture neither fundamental enough, nor sufficiently strategic to warrant particular attention (Deakin, 2010a, 2010b). The following challenges this academic wisdom and assumption which states that such networks, attributes and capacities don’t warrant attention from either University, or Industry.

It suggests: what makes the innovation systems of certain cities smart, defines them in this way and allows them to stand out, is the growing tendency for a certain type of academic leadership to consider the embedded intelligence of these networks, attributes and capacities as something of strategic value. Something of strategic value for the reason:

- > they open up the opportunity for communities (academic-led, business orientated and citizen-centred alike) to learn about how their participation in the governance of scientific and technical innovations in the tele-communications sector can leverage a process of wealth creation mutually advantageous to both University and Industry alike (Deakin and Al Waer, 2011; Deakin, 2012a, 2012b);

- > that in leveraging such a mutually advantageous process of wealth creation, government involves itself with and participates in a “third mission” agenda which is not exclusively proprietary, but communal. In that sense wrapped up with the polices, corporate strategies and academic leadership of ICT-related developments which are purposefully designed to be socially-inclusive by “reaching out”, “working alongside and in partnership” with their counterparts (Deakin and Al Waer, 2011; Deakin, 2012a, 2012b).

Figure B meets the socially-inclusive expectations of this so-called participatory governance. It not only configures, but assembles the informational basis of a communication system able to overcome the “statesman”, “corporatist” and “laissez faire” idioms of knowledge production. Here the “overcoming of these legacy systems” is achieved by founding the informational basis of this communication system, not on either fundamental, or strategic accounts of their ICT-related developments, but instead on the intellectual capital embedded in the social networks, cultural attributes and environmental capacities of this third mission agenda.

This is how the Triple Helix represented in this model of smart cities neither over-relies on the reflexivity of knowledge production under the political economy of the nation-state (statesman and corporatist idioms), nor on the intuition of cultural creativity within the ongoing internationalisation of neo-liberal agendas (laissez faire), but instead localises the contemporary breakdown of the former and territorial expansion of the latter in the wealth created from the ICT-related developments reported on.

This process of wealth creation manifests itself in the development of electronically-enhanced services, whose customisation of the networks, cultural attributes and environmental capacities is smart because it leads cities to co-design these ICT-related developments as a set of business-to-citizen applications (see Figure B). In this instance, as a set of business-to-citizen applications, whose multi-channel access and user-profiles have the attributes and

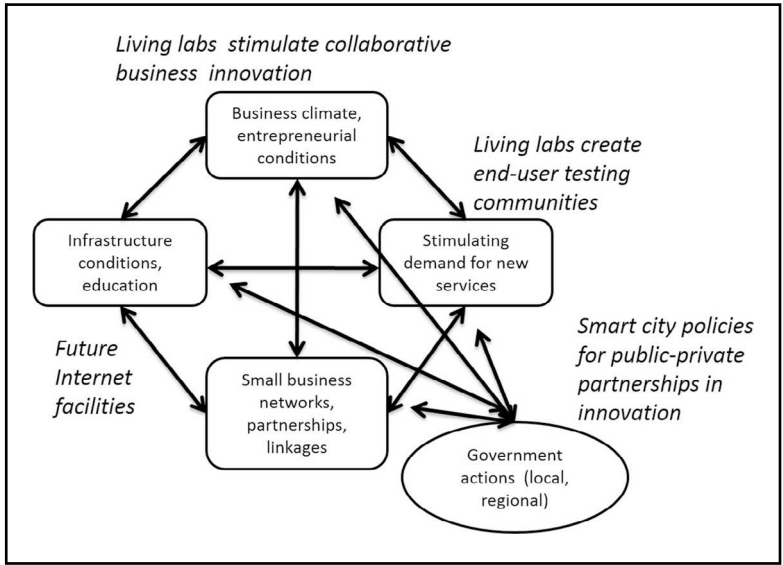
A.
Smart city value creation and innovation system
Source: Schaffers et al. (2011: 443)

B.
The Triple Helix of smart cities
Source: adapted from Deakin (2010: 430-432)

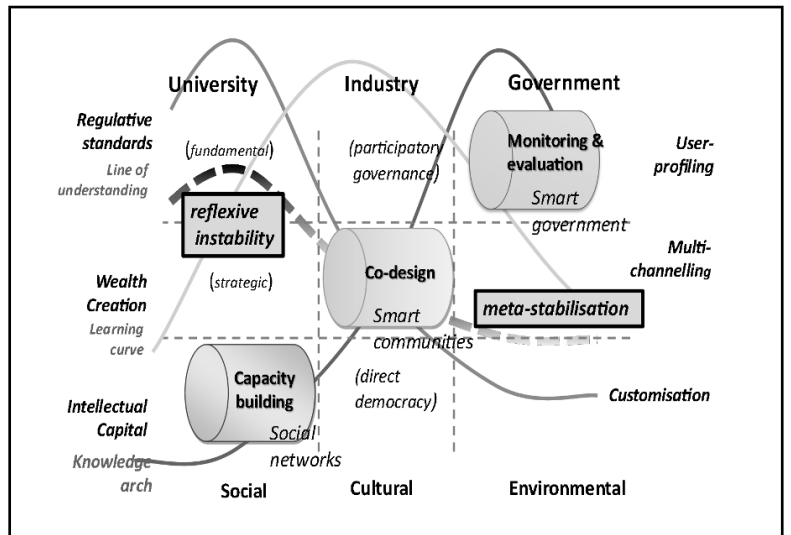
C.
Contours of the Advanced Triple Helix
Source: Kourtit et al. (2014)
Notes:

1. With respect to the traditional Triple Helix, the smart cities of this regional innovation system are above the EU average. As such they have a higher proportion of young adults engaged in higher education, a higher share of labour force in the government sector and a higher intensity of firms per population.

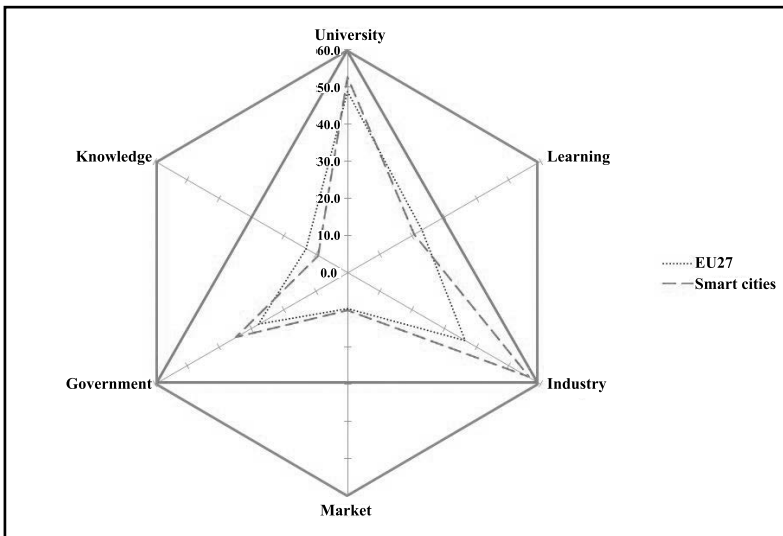
2. However, while Smart Cities match the average EU performance in terms of the market, they slightly under-perform in knowledge and learning when compared against the EU average. This suggests that, while the 9 cities in this sample are indeed moving in the right direction, there is still room for improvement.



A.



B.



C.

capacities that communities need to participate in the governance of these developments and for cities to be smart in opening up the spaces which are required for the intellectual capital embedded in this process of wealth creation to act as an exercise in direct democracy (Deakin, 2012a, 2012b).

>>Figure B: the Triple Helix of smart cities

Such a Triple Helix Model of smart cities not only allows participation to serve as a means to re-integrate government back into the contemporary state of knowledge production, but also gets beyond the corporate marketing campaigns of “Smart City Ranking” and the more anthropocentric line of reasoning associated with ENoLLs “Living Lab” account of ICT-related developments. For rather than following the line of reasoning which projects the knowledge economy into the vitality of the “innovation ecosystems” surrounding these emergent spaces, this Triple Helix inspired model does something else. This something else being: the “overlying” of the communication system onto cities that pioneer such ICT-related developments and which in turn present them as a mirror image of everything which has come to symbolise “being smart” by setting out:

- > the communication system that embeds the ICT-related developments needed for such forms of social capital to underpin the networks upon which their intelligence stands (Deakin, 2011a, 2011b);
- > the attributes and capacities which communities in turn require to open up the spaces that make it possible for their participation in the third mission agenda of this government-led venture to create wealth (Deakin, 2012a);
- > the co-design of business-to-citizen applications, multi-channel access and user-profiles that provide communities with the intelligence which is needed for them to participate in the governance of these ICT-related developments alongside University and Industry and open up the spaces required to create wealth from such exercises in direct democracy (Deakin, 2012b).

The significance of how this critical synthesis of the underlying legacy systems also surface as a reconciliation for the reflexive instability and meta-stabilisation all of these innovations are equally wrapped up in i.e. as a dynamic process of trans-national development and global change, is perhaps best captured by Caragliu et al. (2014). For symbolized in terms of the outcomes their investigation into such development and change generate, Caragliu, et al. (2013:186) suggest this:

“Show[s] consistent evidence of a positive association between urban wealth and the presence of a vast number of creative professionals, a high score in a multimodal accessibility indicator, the quality of urban transportation networks, the diffusion of ICTs (most noticeably in the e-government industry), and, finally, the quality of human capital. These positive associations clearly define a policy agenda for smart cities, although clarity does not necessarily imply ease of implementation.”

Caragliu et al. (2013) also go on to suggest that if government policies towards smart cities are going to be successful in maintaining the types of positive associations Future Internet accounts assume them to be the harbingers of, there shall not only have to be a deep restructuring of the of the ICT sector, so as to include, transport, energy, water and waste, but complete rethinking of the communication infrastructure.

The metrics

Reviewing the metrics of smart city developments, Kourtit et al. (2013:200) reiterate many of the debates found elsewhere on the embedded intelligence of social networks, cultural attributes and environmental capacities of smart cities, but go on to advance on these by:

“adding another unifying factor to the analysis, namely urban environments and their contour conditions. While it is accepted by the authors of this [paper] that knowledge is created by the interplay and relations of the three traditional helices interacting within regional innovation systems, with the Advanced Triple Helix model we propose, its accumulation is enhanced by way of interaction with urban environments and through their contour conditions. [For] contour

conditions not only contribute to the creation of the intellectual capital within cities willing to achieve a 'smart' status (in the sense of contributing to wealth creation); they also influence the setting of the standards Government draws upon to regulate this regional innovation system."

This, Lombardi et al. (2012) and Kourtit et al. (2013) both suggest, is significant, because such a modified representation of the Triple Helix underlines the importance of analyzing the multitude of cultural attributes and environmental capacities when assessing the performance of smart cities (see Figure C). In particular, the importance of evaluating this performance as part of an Analytical Hierarchy Process (AHP) that serves to extend both the form and content of the Triple Helix which is set out in Figure B. This modification of the Triple Helix involves the following:

- > translating the traditional Triple Helix schema into a set of metrics able to approximate the smartness of cities;
- > setting out the 6 dimensions of the Advanced Triple Helix;
- > laying down the indicators for measuring the smartness of cities;
- > carrying out a Principle Component Analysis (PCA) representing the relationship between the Advanced Triple Helix and smartness of cities as a performance measurement.

In extending the multi-dimensional nature of the intelligence embedded in the cultural attributes and environmental capacities set out in Figure B, the subsequent configuration (set out in Figure C) serves to formalise the Advanced Triple Helix Model of smart cities and content of this future internet-based performance measurement.

Within the contours of the Advanced Triple Helix, smartness and relative positioning of cities do not necessarily coincide. In order to make this statement evident, Kourtit et al. (2014) compile a performance index within the Advanced Triple Helix based on the PCA of indicators assembled to assess the smartness of cities.

Here the indicators of smartness are defined as: percentage of households with internet access at home; proportion of households with broadband access and as such are measures which link the content of Figures B and C to the form that is represented here. This is because of the significance "internet access at home" symbolises for society and the ICT-related developments this in turn networks as the cultural attributes and environmental capacities of smart cities, both by way of Web2.0 services and through broadband access.

>>Figure C: Contours of the Advanced Triple Helix

As Kourtit et al. (2014: 206) state: the noticeable outcome of this analysis is that:

"no city scores high with respect to both indicators, highlighting a potential direction for future improvement. In quadrant II we observe cities scoring high in terms of ICT endowment, but relatively worse in terms of structural innovation-oriented characteristics. In quadrant IV the opposite happens, with cities showing a good performance of traditional triple helix elements, but less rich in terms of ICTs. Quadrant III, finally, shows two cities with potential for improvement along both dimensions".

The extent to which the smartness of these cities can be said to stand up to the Advanced Triple Helix is perhaps notable, in the sense that it is only equalled by the degree to which they can also be seen - on this count at least - to stand apart and fall short of that measure. This serves to reiterate the key message drawn from the modified Triple Helix Model offered in Figure B: namely; the current absence of suitable policies means smart cities do not possess either the corporate strategies needed, or academic leadership qualities required for communities participating in their development to meet the governance challenge the public formally recognise. In particular, the governance challenge that it formally recognises and Figure C accounts for as the content of those assessments which measure their respective performances i.e. the smartness of cities based on the standards of strategic leadership laid down by the Advanced Triple Helix.

As Leydsedorff and Deakin (2011: 57) point out, this “standing apart and falling short”, is something that offers a particularly critical insight into the development of smart cities, vis-a-vis the tendency which there is for the reflexive instability of the intellectual capital embedded in their social networks, cultural attributes and environmental capacities, to produce a “creative slack”. To produce a creative slack that in this instance stands as an index of the knowledge which is generated from these networks, attributes and capacities being insufficiently strategic. Insufficiently strategic in the sense that any meta-stabilisation which this produces is not fundamental enough for communities to directly participate in such a process of wealth creation as part of a democratic governance. That is as part of a democratic governance which is capable of opening up the urban neighbourhoods of city districts to an environmentally sustainable reconstruction able to “tighten up”, “take the strain” and “stretch matters”. Tighten up, take the strain and stretch matters, to the extent it becomes possible for such a transformation to demonstrate what the ecology of this regional innovation system contributes to the vitality of the knowledge economy (also see Deakin and Leydsedorff, 2013: 139-145).

The governance challenge

As Paskaleva (2009, 2011, 2014) and Deakin (2010a, 2012b, 2011a, 2011b) note, in order to get beyond the rhetoric of cities that claim to be smart and properly stand up to the governance challenge which smart cities pose, it is necessary to not only survey the status of the cities that proclaim to be smart, but assemble the instruments by which to measure any such performance. Instruments that include: the models; networks, analytical frameworks and metrics, which make it possible to measure the smartness of cities. Models, networks, analytical frameworks and performance measurements that in this instance do not present themselves as readily available, off-the-shelf, user-ready knowledge products, but as instruments which need to be assembled, constructed and built before they can meet the governance challenge in hand.

However, having presented this in the form of the critical synthesis which the paper advances as a Triple Helix inspired account of smart city development, the lingering concerns that are associated with such a construction lie with whether the cultural and environmental significance of the emerging innovation systems shall merely reproduce the status quo, or if the participatory governance of direct democracy will only serve to punctuate the divisions underlying civil society and inequalities surfacing in the knowledge economy. Here concerns linger over the adverse effects that any such fault line within the constitution of smart cities, their regional innovation systems, trans-national manifestation and global extension, have on communities already caught in the digital divide which their reconstruction as the urban neighbourhoods of city districts aim to bridge.

Based on this, it is evident that while the contributions from the Future Internet development thesis and Triple Helix Model do much to allay many of the fears surrounding the logic of leading corporate marketing campaigns, anxieties about the social capital, cultural attributes and environmental capacities of the technological possibilities smart cities offer still remain. For it appears the degree to which the accumulation of social capital and deployment of intelligence their networks embed and in turn draw upon to cultivate Future Internet developments, is seen as being sufficient to undercut the market economics of entrepreneurial-driven business models, is a matter that many (for example, Paskaleva, 2013) still consider to be left “in the balance”. Given the absence of any methodology supporting the Future Internet’s call for smart cities to be based on citizen-led co-creation, statements about the value of what the business models underlying such reconstructions contribute to “welfare and well-being” of regional innovation systems probably work best to highlight the true nature of the governance challenge this poses.

This is because such statements still illustrate a tendency to be overloaded with normative intent, unable to reveal where the integration of any such innovations can systematically

open up the spaces needed for the urban neighbourhoods of city districts to be smart. For despite all of their ground breaking features, such accounts of smart cities don't currently cultivate the attributes that are needed for them to participate in the governance of this reconstruction as an exercise in direct democracy, let alone the environmental capacities to sustain any such a process of wealth creation (Deakin et al. 2014).

In the absence of such evidence, the accounts of such reconstructions currently take on the status of meta-narratives and in that sense a "mise-en-scene", which lack not only the principles, but intermediate concepts needed for the intelligence they currently possess to systematically evolve as innovations capable of being scaled-up to the size, weight and extent required. In particular and in this instance, as innovations not only able to create wealth on the standard called for, but as a measure of the cultural attributes and environmental capacities that communities need for cities to be smart when escalating their ICT-related developments in a manner which reflects the type of citizen-led change pioneers of this kind expect. For in order to demonstrate such an escalation and do so as a standard measure of wealth creation, it is not so much agendas which are needed, but models that are required. Models that are in turn able to systematically capture the true significance of such future internet developments (i.e. in terms of both the extent, weight and size they amass) and represent this as a standard measure of the value these technologies offer communities to be smart.

The reason for the slack we currently witness can perhaps best be explained by the tendency for Future Internet developments to undercut the value of social networks, the intelligence they embed, cultural attributes this underpins and environmental capacities they in turn support as a standard measure of wealth creation. The tendency, that is, which they display to undercut all of this and instead represent smart city developments as the ecology of a predominantly technological experience that offers the means by which to shore up the vitality of the knowledge economy.

The representation of the Triple Helix advanced here does not succumb to this tendency.

It instead does not play on the idea of an ecosystem as something which naturally aligns with the economic, but instead represents it as social phenomena that serve to underpin the networking of the intelligence smart cities embed, cultural attributes and environmental capacities which these in turn support. Which these attributes and capacities in turn support for the simple reason they serve as a means to "offer up" the "wealth of creative powers" that communities need to cultivate the type of future internet developments cities embark on to be smart. That cities embark on to be smart in the sense which the type of environmentally sustainable reconstruction future internet developments open up the opportunity for and make possible, not only serve the ecology of urban communities as city districts, but as the very means for this regional innovation system to hold such transformations up as a vital sign of the knowledge economy.

Conclusions

In addressing the governance challenge smart cities pose, this paper has subjected state-of-the-art accounts to a critique and drawn upon the synthesis this produces to advance a Triple Helix Model able to overcome the limitations of both the Smart City Ranking and Future Internet accounts of their development.

The model of smart cities advanced in this paper overcomes these limitations by not only configuring, but assembling the informational basis of a communication system whose recursive nature manages to transcend the reflexive instability associated with the "statesman", "corporatist" and "laissez faire" idioms of knowledge production. Something which this Triple Helix Model of smart cities manages to achieve by founding the informational basis of this communication system on the logic of a "third mission" research agenda that captures the quintessentially civic value of knowledge produced in locally specific contexts.

In capturing the quintessentially civic value of the locally-specific knowledge produced from this bottom-up exercise, the Triple Helix Model

advanced offers cities the prospect of being smart by turning the reflexive instability they currently experience to their advantage. That is by doing nothing less than seizing the opportunity which the instability of this meta-stabilisation offers the academic community to reflect on how such government-led agendas can bootstrap the notion of smart cities by capitalising on the wealth of potential ICT-related developments offer to create value.

The capacity this Triple Helix Model has to process such a socially-inclusive, culturally diverse and environmentally sustainable reconstruction of cities reflexively; that is, in terms of translations which form part of a meta-stabilisation, is what marks this process of knowledge production out as a ICT-related development that is smart in the sense which it moves wealth creation beyond the dismantling of national systems and construction of regional advantages and in the direction of the local.

In that it moves wealth creation beyond the impasse of this systematic dismantling and construction of advantage and onto a platform which points in the direction of a local milieu. Onto a platform that points in the direction of a local milieu and which in turn embeds the intelligence, cultural attributes and environmental capacities that cities need to be smart when promoting ICT-related developments which champion the internet.

In particular, in the direction of those attributes and capacities which are needed for Universities and Industry to champion the future internet as ICT-related developments that open up the urban neighbourhoods of city districts to a participatory governance whose exercise in direct democracy is itself seen as being smart.

Whose exercise in direct democracy is itself seen to be smart in terms of the underlying environmentally sustainable reconstruction this platform supports, but which as yet is insufficiently strategic to shore up the third mission agenda that such a government-led meta-stabilisation advances.

That is shore up the third mission agenda which such a government-led meta-stabilisation advances to pick up the creative slack and be sufficiently fundamental for such an environmentally sustainable reconstruction to carry the full weight of scientific and technical expectation. In that sense sufficiently fundamental for such an environmentally sustainable reconstruction to carry the full weight of scientific and technical expectation, by revealing what it is about this meta-stabilisation which not only underpins the ecology of urban communities as city districts, but that is equally strategic in supporting the very means which make it possible for regional innovation systems to also hold these particular transformations up as a vital sign of the knowledge economy.

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A.
Voice from the audience

B.
**Day 2 - Discussion Panel 1,
at TU Berlin**

„I really like the idea of defining the city as a sort of complex and incomplete system. The question is to some extent whether these smart city infrastructures empirically can be understood as closed, integrated systems. I think here we are very often at the level of imaginaries, of what they are selling us and believing that and criticizing that image. But if we go to the sort of control rooms of those new smart systems we will encounter a number of very complex and incomplete processes that they are trying to make sense of, they are trying to assemble these together. So I think the first step is not just to criticize the smart city ideal or imaginary but really go empirically about how these things are working and to show their own complexity. I think this is like the first step towards a destabilization or de-centering of the smart city ideal. The second thing that is also connected to this is also an empirical problem that we often tend to imagine how these systems work in this kind of post-foucauldian idea of that they kind of subtly inform human practice, that they subject people. And this idea that objects and technologies shape the social in a very subtle way. In a way that is invisible. But again, if we are more empirically, and this has to do with politics of doing research, of what do we want to show, you encounter a number of situations where objects are relevant not because they subtly shape, but because they are politically contested, they are loaded with political and moral capacities and they become huge matters of concern. They become the very center of socio-technical controversies. I think it is important to not buy into this idea that smart cities are subtly functioning systems.“

A.



B.

MANAGEMENT / SMART PEOPLE AND URBAN GOVERNANCE

Panel 2

Ola Söderström

Gudrun Haindlmaier

Ayona Datta

**Introduction by
Carolin Schröder and
Philipp Misselwitz**

In this session we would like to focus on how new technological possibilities impact on governance arrangements and what possibilities and risks emerge for citizens in this process. Reflecting on recent trends and applications of Smart City technologies within urban governance we, together with our panelists, would like to discuss the impact of the Smart City: has the inclusion of new technologies led to new forms of potentially transformative participation and decentralized governance, or has it rather reinforced hegemonial power coalitions? We would like to do this through a series of contributions that extend the geographical field of discussion beyond Europe into the so-called global South.

First and foremost it is important to understand governance as a conflictual field in which different actors struggle for power and legitimacy. Smart city discourses respond to, and are fuelled by, what we may call a “crisis of government”. In many European countries city governments struggle for legitimacy and control vis-à-vis an increasingly emancipated urban population that questions top-down technocratic governance approaches. The possibilities to participate in decision-making processes within large-scale planning projects, for instance, are viewed as formalistic, bureaucratized and tokenistic. Street protests and new forms of direct democracy such as plebiscites regularly topple prestigious government initiatives, most recently a housing initiative on Tempelhofer Feld in Berlin, or criticize the perceived side-effects of large public projects such as the Olympics in London.

Amidst these tensions, the Smart City emerges as an ambivalent project: new technologies of data mining and management are adopted with the promise of more openness, transparency and grassroots participation but at the same time serve as a tool to regain initiative, to better predict and control how citizens think as well as to better communicate, sell and forge acceptance of urban transformation projects. In light of such critiques “urban commoning” is often proposed as a better, more inclusive and people-centred governance paradigm. But recent critical scholarship has pointed to the fact that so-called “alternative spatial practices” (e.g. temporary uses associated with cultural and creative economies) in European cities also produce new forms of exclusion.

In many cities in the global South, lack of resources, capacities and mandate often radically reduce the role and impact of urban governments. Rapid urbanization here is largely managed through the market and self-provisioning cultures of the urban poor. Informal urbanization remains the predominant mode of urban growth. To many city managers of under-resourced cities in the global South the Smart City is a seductive promise. Can poor cities leapfrog the competition of better equipped and serviced cities through smart technologies? Can effectiveness and transparency offered through technology help to break ineffective and corrupt systems and help to build a more democratic and inclusive society? Many critiques of Smart City applications in the global South suggest that the opposite might be true. Rather than helping to build more inclusive governance systems, the fascination with the Smart City tends to bind limited state resources for prestigious projects (e.g. satellite towns) that distract from essential urban needs. If they happen at all, they tend to skew state spending into questionable investments and new urban developments, and to exclusively serve the already rich. In the meantime, an alternative “smartness” may be found in the coping and sharing strategies of the urban poor who have no alternative than to organize urban life beyond the state.

Through confronting these diverse perspectives from South and North the panel asks:
How can we ensure that large data concentrations do not merely reinforce hegemonial power coalitions or corporates but serve to build better, more transparent, inclusive and democratic urban government?

Can practices of sharing and pooling resources often associated with the term urban commoning contribute to a broader definition of “smart urbanism” beyond current Smart City discourses?
Can smart people become active participants and partners in new urban governance models based on knowledge sharing?

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From a Technology Intensive to a Knowledge Intensive Smart Urbanism

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1.
See in particular call H2020-SCC-2015: <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2148-scc-01-2015.html>

In the past few years, a number of critical pieces have been written about smart cities, moving the discourse beyond the self-congratulatory literature that was predominant until 2010. This work has deconstructed the discourse and ideology of smart urbanism (henceforth: SU) (Hollands, 2008; Kitchin, 2014; Söderström et al., 2014; Vanolo, 2014), analysed real smart cities through fieldwork in places as different as Dholera (Gujarat), Cape Town or Philadelphia (Datta, 2015; Odendaal, forthcoming; Wiig, 2015) and discussed alternative forms of smart urbanism with regards to corporate-led versions (Hemment and Townsend, 2014; Luque-Ayala and Marvin, 2015, early view). Considering the ideological nature of the discourse around SU and its close association with corporate interests (Hollands, 2015), one may wonder if this is not enough. Should we not as scholars simply leave it there, having done the necessary work of critique. In many ways, continuing to talk about smart cities can be considered as talking the language of the largest IT companies. It also means under-estimating their capacity to digest all forms of critique at their advantage, because, as Boltanski and Chiapello (Boltanski and Chiapello, 1999) put it a few years ago: “the main factor explaining the solidity of capitalism since the 19th c is probably its capacity to listen to critique”.

However, SU today is more than pure rhetoric: it has become a powerful and performative discourse, notably in the Global South. In Africa, it proliferates in new Masterplans and grand visions of urban futures (Watson, 2014). In India, the SU narrative, supported now by the nationalist discourse of the Modi regime, is used as a means to justify land grabbing and dispossession (Datta, 2015). On the other hand, public intellectuals and activists are trying to find ways of bending it so that it serves other interests than the ones represented by global business. So we cannot just leave it there: we need to engage in the analysis of the variegated forms that ‘real’ smart urbanism takes on the ground, both in the urban policies of national governments and municipalities and in the grassroots initiatives and social movements that disturb, resist or create their versions of SU.

This paper argues that a redefinition of SU is a pre-requisite for a continued scholarly engagement with SU, i.e. for work that continues to discuss SU beyond the dominant categories crafted by IT corporations or suggested by research funding programmes such as Horizon 2020¹. This dominant discourse is “supply oriented, usually concerned with growth and economic priorities and more formal modes of social organization” (Luque-Ayala and Marvin, 2015,

early view, 8), rather than demand orientated and concerned with social justice. It also promotes an apparently a-political or post-political view of urban development strategies (Söderström, et al., 2014) paving the way for a corporatization of city governance (Kitchin, 2014).

Therefore, this paper argues that in order to open up the discussion to broader interests, to possibilities of dissent and democratic discussions on urban futures we need to return to the original meaning of smart and move from a technology-intensive to a knowledge-intensive smart urbanism. In other words, a redefined smart urbanism should be grounded in places with their specific populations, resources and problems, rather than start with technology. I thus agree with Hollands (quoting Hoornweg) when he writes that “the ‘real’ smart city needs to start with the city and its attendant social problems, rather than looking immediately to smart technology for answers” (Hollands, 2015, 63).

To substantiate this argument, my reflection unfolds in two steps. First, I reflect on the different dimensions of a knowledge-intensive SU, contrasting it with dominant corporate-driven logics. Drawing on theoretical work on knowledge-production in planning theory (Lindblom and Cohen, 1979) I discuss how this knowledge should be framed, by whom it should be produced and what aspects of the urban it should concern. Second, I briefly exemplify alternative forms of knowledge production in the context of a research on the urban geographies of persons with mental health problems. I conclude with a brief discussion regarding the new alliances between urban studies and urban policies within a redefined SU.

Redefining smart urbanism

Recent critical scholarship identifies a series of risks in dominant formulations of what SU consists of: the obfuscation of the negative effects of IT on cities (Hollands, 2008), a return to the failed utopias of 20th c. high modernism (Greenfield, 2013), the rise of technocratic governance (Kitchin, 2014), the discrimination of ‘non smart’ citizens (Vanolo, 2014) or the prioritization of IT networks over other more urgent needs in municipal agendas

(Söderström, et al., 2014). Analyses of actually existing SU (Shelton et al., 2015) describe the regimes of exception and processes of land dispossession accompanying the implementation of SU (Datta, 2015), the processes of depoliticisation of urban redevelopment management (March and Ribera-Fumaz, 2014), or the priority given to the attraction of global business (Wiig, 2015). More nuanced voices depict situations where different versions of SU oriented towards economic growth or social development are in tension, follow each other and overlap (Odendaal, forthcoming; Townsend, 2013).

These more nuanced analyses of actually existing SU are both related to the various political orientations of municipalities (Ching and Ferreira Jr, 2015) and the proliferation of grassroots movements that either explicitly react to SU policies in their city² or develop creative solutions that can be characterized as smart.³

SU is thus more than ever an unstable concept: though dominant versions, such as IBM’s (McNeill, forthcoming), are still the most visible in the public sphere, it refers to vastly different initiatives and strategies. Where should we then go from here? Developing ways of theorizing, examining alternatives and doing comparative research are some of the possible priorities identified by Luque-Ayala and Marvin (2015, early view) in their critical research agenda. My contribution bridges two of these issues as I try to rethink the core of SU and examine how this reconceptualization might be relevant to grasp the power of alternatives.

Efforts to reconceptualise SU are not new. Some authors suggest that we should build on the critique of SU as being too technology and corporate-driven and add new aims to existing SU frameworks. Caragliu et al. (2011, 70) thus argue that the conceptualisation of SU has been too narrow and that “the stress on the Internet as ‘the’ smart city identifier no longer suffices”. They suggest a theorization that includes 6 axes: “smart economy; smart mobility; a smart environment; smart people; smart living; and, finally, smart governance” (Ibid.).

2. See for instance the Hyderabad Urban Lab (<http://hydlab.in/blog/notes/commentary/will-the-real-hyderabad-please-stand-up/>), on which more is said below.

3. See for instance: <http://www.blemya.com/2010/01/state-of-art-social-entrepreneurship.html>

4. <http://www.ibm.com/smarterplanet/ca/en/smartercities/overview/>

5. See the arguments of the engineer Philippe Bihouix (2014) on the necessity of low-tech solutions (allowing repairability and collective use) in the perspective of a technically sustainable future.

6. I am aware of the limits of etymological argumentation – as exemplified by Heidegger’s (ab)use of etymology as ground truths, for instance in texts such as ‘Building, dwelling, thinking’ (Heidegger, 1971) –, so I do here something that I could call ‘strategic etymologism’...

7. Water and energy were in previous versions of IBM’s smarter cities vision considered together, but are now seen as separate urban systems.

They want thereby to put more emphasis on social inclusion, social capital and sustainability.

However, such rethinking is not very helpful in identifying the core of SU. If it’s not IT, then what should it be? Neither are such list-like frameworks clear enough to circumvent the capacity of corporations to digest critique. As Kitchin (2014: 3) notes ‘smart city vendors such as IBM and Cisco have [already] started to alter the discursive emphasis of some of their initiatives from being top-down managerially focused to stressing inclusivity and citizen empowerment’. Corporate visions of SU can indeed turn any (new) theme into indicators and data, possibly also to captors or sensors to make it amenable to software analysis. This is exemplified by the cybernetic vision of SC promoted by IBM and its vision of cities as being composed of 9 (or 10 depending on the versions) systems or Cisco’s 4 layers of SU⁴.

>>Figure A: IBM’s 9 pillars composing the (smarter) city

So, adding new themes does not challenge such cybernetic imaginary which is functional to promoting and selling smart urban technologies. If we want to overcome the trap of technocratic governance and the technology-push ethos, common in engineering sciences and of course in IT corporations, a more radical critique is needed. This critique should not evacuate the role of technology, which is central to the genealogy of SU (Goodspeed, 2015), but displace it. Moving beyond technology-push postures means opening up a space for thinking new, creative, smart initiatives and strategies where technology might be enabling but not necessarily the starting point and where solutions can often be low-tech or no-tech.⁵ This requires a redefinition of smartness as a knowledge-intensive rather than a technology-intensive vision of cities and their development.

Knowledge is etymologically at the root of the word ‘smart’: according to the Oxford English Dictionary, the adjective smart is a very old word related to two semantic fields to be found already in the 14th c.: the first is smart as something sharp, stinging, cutting. Smart

describes here the properties of an object. The other set of meanings relates to qualities of speed, intelligence and neatness.

This second more abstract meaning is of course the smartness invoked by the dominant SU narratives but it refers etymologically to intelligence and knowledge rather than technology.⁶

Simply arguing for a knowledge-intensive conception of smart urbanism does of course not lead us very far. Any city official involved in urban development would contend that her or his strategy is knowledge-intensive. To redefine SU as knowledge-intensive, we should, I suggest, ask three very simple questions and confront them with dominant visions of SU. The first question is the question of framing: who frames what we need knowledge on? The second is: who provides knowledge for urban development strategies? And the third is: what type of knowledge is needed?

In corporate-led smart urbanism, IT companies frame the knowledge that is needed. IBM with its 9 (or 10 pillars)⁷ for instance. Such framing presupposes that cities across the world can be envisioned in the same way. However, as recent work in postcolonial urban studies rightly insists (Robinson, 2006; Roy, 2009; Watson, 2009), we need - beyond some possibly universal concepts and approaches - region- and place-specific frames and categories of analysis in order to develop relevant forms of thought and action.

To take but one example: in previous work I have looked at the variegated categories of public space in Europe, Africa and Asia and shown how framing public space with concepts from elsewhere may lead to misunderstandings and problematic policy decisions (Söderström, 2014; Söderström and Geertman, 2013). The way knowledge on cities is framed cannot therefore be left to traveling corporate consultants but should rely on independent expertise and processes of grounded knowledge (co-) production.

The second question - who provides knowledge for urban development? - is of course closely related to the former. In the dominant SU narrative, there is a worrying return to high

modernist forms of exclusively expert-driven urban planning (Söderström, et al., 2014).

Important therefore is to remobilise critical planning theories of the 1970s and beyond, as they precisely were seeking alternatives to modernist-functionalist planning postures. The theory of usable knowledge (Lindblom and Cohen, 1979) is particularly relevant in this context. Assuming, contra the modernist idea of a unique position of scientific authority, that knowledge-production is a socially distributed competence, Lindblom and Cohen suggested that the production of usable knowledge requires the articulation of three forms of knowledge: lay or ordinary knowledge, expert knowledge and knowledge generated by the interaction between experts and ordinary citizens. A knowledge-intensive smart urbanism should thus combine knowledge produced by different types of actors in dialogue.

Finally, what type of knowledge is needed? Another implicit assumption of corporate-led SU regarding knowledge is that there is available data on what we need to know and that the essential questions are data-mining, the construction of inter-operable data sets and their connection and interpretation through algorithms. However, as the word indicates, statist(e)istics have historically always reflected what the State wants to know and hence been a highly selective and power-laden exercise (Desrosières, 2002). In contemporary urban situations a number of initiatives show that some areas, such as slums, are blank spots on our city maps and that the government lacks informations about critically important aspects of urban life.⁸

The Hyderabad Urban Lab for instance, located in a city that claims to be smart, has made a mapping of the (rare) public toilets in the city: data that do not appear as a priority for the municipality (see figure 2). The project of a knowledge-intensive smart urbanism should thus be to produce knowledge on aspects that are routinely absent from urban statistics.

>>Figure B: Public Toilet Complex at Koti Circle, Hyderabad

Smart urban practices of persons with mental health problems

In order to exemplify what this might imply concretely in terms of knowledge-production, I briefly refer in this paragraph to a research in which I am presently involved regarding urban geographies of mental health : a dimension which is not framed as an important one in corporate-driven SU. It is an interdisciplinary research with young persons with psychotic troubles in the city of Lausanne, Switzerland, involving psychiatrists and geographers.⁹ Aim of the research is to better understand the relation between urban milieus and non-affective psychosis (schizophrenia primarily) and why there is a much higher incidence of such troubles in cities. This higher incidence has been observed since the 1930s (Faris and Dunham, 1939). Recent medical research indicates that urban features have an intrinsic impact on the psychic health of persons who are vulnerable in terms of psychotic troubles (Kelly et al., 2010; Krabbendam and van Os, 2005). In other words, the higher prevalence of psychosis in cities is not reducible to a process of risk selection – implying for instance a higher rate of drug-users – but is related to the characteristics of urban living. However, epidemiological methodologies, predominant in medical research, are largely inadequate to grasp the mechanisms explaining how complex urban milieus have an impact on persons vulnerable to troubles situated in the spectrum of schizophrenia. Therefore, our investigation rests on the hypothesis that to better understand the city/psychosis nexus we need to move beyond classical epidemiological research designs and develop an experienced-based approach .

The research involves mixed-methods : a survey, focus groups, interviews, video go-alongs and video-elicitation. The co-production of knowledge between persons with mental health problems, psychiatrists, case managers and geographers is crucial in our approach. The interaction of these different perspectives is necessary to produce 'usable knowledge'. The video-recorded go-alongs and the elicitation of the videos with the patients are particularly important.

>>Figure C: Map of a video-recorded go-along

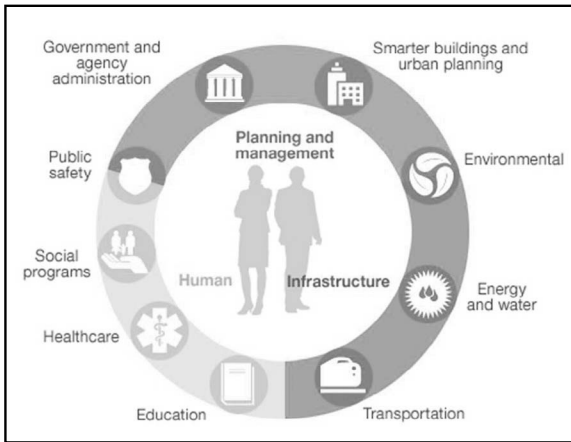
A.
IBM's 9 pillars composing the (smarter) city
Source: IBM

8.
See note 2 on the Hyderabad Urban Lab and, for instance, the work on slum mapping in Kibera (Nairobi, Kenya): <http://mapkibera.org/>.

B.
Public Toilet Complex at Koti Circle, Hyderabad.
Source: Hyderabad Urban Lab

9.
Swiss National Science Foundation research grant "Understanding the relations between psychosis and urban milieus: an experience-based approach". The team involves researchers from the universities of Neuchâtel, Lausanne and Basel. The author of this paper is PI in this research (Co-Investigator: Prof. Philippe Conus, Univ. of Lausanne).

C.
Map of a video-recorded go-along
map: Zoé Codeluppi and Julien Bachmann



A.



B.



C.

With these methods we are grasping both situations of stress and coping strategies: how persons with mental health problems navigate the city, avoid stressful atmospheres and search for zones of sensorial and existential comfort. We uncover together the smart urban practices of persons with mental health problems and thereby produce data and knowledge as yet unavailable. What we hope is that the results will be used in therapeutic strategies but also in the planning of mental healthcare facilities and in urban planning more broadly.

I consider this research as a modest contribution to a knowledge- rather than technology-intensive SU where (hopefully) usable knowledge is produced on issues that are absent from traditional urban statistics.

Conclusion

To wrap things up: I think it is time to try to articulate what an alternative SU could be, beyond simply pointing at grassroots initiatives here and there. My intervention on the idea and dimensions of a knowledge-intensive SU is a first and modest step in that direction.

To move forward in this direction, we need to create new alliances between urban studies and urban planning. I think we can learn a lot in that respect from initiatives in the Global South, where scholars and activists deal with massive corporate and government-led SU initiatives. I very recently embarked on a project in the city where I work, in Neuchâtel Switzerland. Interestingly enough, the municipality of this city does not want a corporate-led packaged solution and we now are in the process of designing a smart city strategy where we will draw on work in cities like Hyderabad, especially the idea of alternative forms of data and knowledge production, exemplified by the research presented above on mental health.

But of course, such initiatives face a complicated political challenge. SU is first and foremost a rhetoric battle-ground or, as Jazeel (2015) puts it, a 'representational strategy'. A strategy, as Datta (2015) shows, which is very successful amongst young educated Indian middle-class people for instance.

Now, compared to the glitzy pictures and techno-imaginaries of mainstream SU, work on mental health, the location of public toilets or slum mapping are not very glamorous. How can we produce appealing counter-narratives when we don't believe in technology-push and universal off the shelf solutions is not an easy question, but it is a crucial one. Images and imaginaries are driving the dominant visions of SU in the public sphere and it is very important to be active in that domain. Hopefully, this very conference is a good starting point for a smart citizen coalition with a common agenda and a plan to create a new and progressive SU imagination.

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Using Local Potentials by Integrating Urban Structures, Innovative Technology and Smart Behavior – the Example of PLEEC

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Contemporary society is characterized by a decline of established hierarchies and a simultaneous rise of complex and interconnected networks on various spatial and social scales. On the background of a rapidly changing environment and strong tensions caused by urban competition, cities are facing a call for new governance instruments. New organizational habits, new practices, networks and institutional arrangements have altered the self-perception of governmental and planning institutions/work, and, consequently, the form and possibilities of interaction with the public (transparency issues, open data etc.) as well as the sequence of planning and steering processes. The information or network society and the new characteristics of information technology as well as the changed role and importance of information (rights-based approaches, open data etc.) undermines long-established strategies of urban government, planning and traditional policies.

However, the current debate on “Smart Cities” is strongly influenced by a technological perspective, often neglecting or ignoring this societal and individual focus. The question that needs to be discussed in this context is: How can smart people become active participants in new urban governance models? To give an insight on this idea, the PLEEC project (funded by the EU as a coordination and support action) will be presented as an example for a strategic integrative approach of 6 smart cities in Europe to improve their energy efficiency by applying the PLEEC model that has been developed within the project. This synergized model shows the integration of spatial structures, innovative technology and citizens’ behavior in smart cities with a strong focus on integrating new instruments of collective sense-making and learning, activating local resources and potentials as well as self-organization and management.

1. Going hand in hand with problems on measurement of density or concentration as there are multiple ways of how to define (urban) boundaries

Contemporary cities are embedded into a network society, a rapidly changing environment and strong tensions caused by urban competition. Urbanization is a still ongoing and increasing process. Thereby, this term refers to different space-related issues, starting from a demographic meaning (rise of concentration of the population in a certain areas of high(er) density¹), an economic connotation (erase of

traditional space-extensive rural or primary activities) as well as a sociocultural denotation (the spread of patterns of urban lifestyles) (Friedmann 2002:3ff). Even if urbanization is generally seen as a set of social processes, it produces artefacts such as built forms, produced spaces and resource systems arranged in a specific spatial configuration (Harvey 1989:6).

Increasing competition between cities and regions

Regardless of the specific spatial and social configurations of different urban systems at various scales, the important role of cities for (global) economy in general, especially for generating wealth, accumulating capital and as driving force for economic development and technological innovation is undoubted. As Oatley states in his studies on British cities, there is a close link between urban competition and the globalisation of economy:

“The acceleration of the globalisation of economic activity and the growing internationalisation of investment flows have accentuated competitive pressure on businesses and led many cities to seek competitive advantage in the urban hierarchy.” (Oatley 1998: 5)

However, cities and regions do not respond equally to these given global economic forces or opportunities as the competitiveness of cities reflects not only their current capacity to engage with global capital, but also is a function of their heritage. Urban competition takes place within certain key areas in which the cities compete for international and highly mobile stakeholders. This uneven impact is enforced by deregulation tendencies and reinforced structural and spatial problems that lead to polarization and fragmentation. Furthermore, the enormous increase in the importance of interactions at the global level is accompanied by a parallel rise of regional and local structures.

Against the background of globalized urban competition, the following main lines of development can be summarized (Dürschmidt 2002: 16; Keller/Stamm 1997: 15, Weichhart et al 2006: 9, 2010: 39):

- > Spatial expansion and increasing interaction density of international action
- > globalization of economic relations attended by deindustrialization and relocation, globalized financial markets
- > Constant revolution and innovation of information and communication technology

- > Post-international and polycentric world politics (Growing importance of environmental issues, issues of global poverty, issues of cross-cultural conflicts in the local context)

The emerging of a new type of highly complex metropolitan city landscapes, the extensive integration into networks, a high degree of internal differentiation lead to polycentric urban structures. Consequently, the current shift away from a top-down oriented city administration and planning towards the emerge of governance structures and approaches suggests that cities are facing new challenges that call for new governance instruments. Summing it up, urban competition is a challenge for urban politics and traditional planning and, consequently, there is a need for strategic approaches. According to Camagni, a city is competitive if it is able to act independently (see Camagni 2002) and therefore competitiveness strongly relates to strategic efforts in form of cooperation networks.

In the following, some considerations on smart cities will show that these networks are not only relevant between cities, but also between city administration/planning and stakeholders within the city. By using the example of a European project, some major argument for strategic approaches in need for an integrative, place based perspective will be discussed.

Smart City - An integrative perspective

Due to the pressures explained above, cities are seeking their position within the urban system. This leads to a rise of ‘adjectival cities’, such as ‘Global City’, ‘post-modern city’ or, as in the focus of this paper, the ‘Smart City’. These specific discursive constructions, as Beauregard calls them, reduce complexity and stabilize meanings whilst have implication on planning actions (Beauregard 2005:24). The term ‘Smart city’ originated from the ‘information city’ by showing the following characteristics:

- > using new ICTs innovatively (e.g implementing a network of sensors in the city)
- > believe in a wired, ICT-driven form of development stresses the integrated database for city governance

- > aims at optimizing decision making in the short and long term
- > managing and controlling city systems by collecting detailed information about real time functioning

The concept is closely linked to enabling urban growth with 'better life', whereby it is not reflected for whom and in which dimensions this urban growth shall/will take place. The main risks of approaching the Smart City from a solely technological perspective are rebound effects, for example: energy cost reductions through technical innovations are followed by an increase of energy consumption and of emissions. The impact of cost reduction results in additional consumption of the same (i.e. more energy through price effect) or of other goods (through relative income effect; see Herring and Roy, 2007).

Basically, technical innovations or data driven approaches support smart city processes which are enforcing efficiency through technical innovations or identifying best technical solutions according to certain goals through data driven analytical research efforts. However, they reduce the city to a merely technical product determined by dominant economic interests. These approaches neither take varying local conditions into account, nor considering technical solutions as probably being ineffective when the technology is socially not accepted. These considerations lead to the argument that technical innovations usually are not sufficient but need complementary changes in behaviour and structural conditions, as the following definitions of 'Smart Cities' show:

"Smart Cities combine diverse technologies to reduce their environmental impact and offer citizens better lives. This is not, however, simply a technical challenge..."
(European Smart City stakeholder platform'
http://www.eu-smartcities.eu/faqs#Smart_Cities*;*
last access 25.2.2013)

"... when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a

high quality of life, with a wise management of natural resources, through a participated governance." (Caragliu, DelBoand, Nijkamp (2009)

European Smart City: PLEEC Energy Efficiency

The PLEEC project tries to bring forward this idea of an integrative understanding of 'smart city' with respect to energy efficient urban development. (PLEEC-project, 2014; accessed on 24th of August, 2015). It is based on the assumption that technology, structures (in form of built structures but also of governance structures) and behaviour of citizens are the three components which influence energy demand/consumption and emissions of cities. Hence, in this project in collaboration with six medium sized partner cities (Eskilstuna, Sweden; Jyväskylä and Turku, Finland; Tartu, Estonia; Stoke-On-Trent, England; Santiago de Compostela, Spain) the main fields of energy efficient urban development with respective domains had been identified through web-based two rounds of surveys. The result shows five key fields with a respective number of most important domains as shown below.

>>Figure A: Basic understanding of the PLEEC-project; key fields and domains of an energy efficient city

Based on this classification the potentials for a more energy efficient development had been identified in form of an energy smart city profile by local stakeholders of their home city besides a quantitative analysis of urban development indicators.

According to the integrative understanding, the main aim is not only to identify place based technical innovations but a combination with corresponding regulations and marketing activities for smart communities creating a more sustainable development. As experiences in PLEEC-project show a place based approach is necessary because cities show up with very different conditions and problems of energy efficient development and, consequently, the profiles of specific innovation potentials are strongly varying across cities.

This has led to the ongoing development of a planning model from evidence to action and monitoring:

>>Figure B: PLEEC-model v2.0 (work in progress)

The model thereby focuses on the place-based approach (as described above) with city-specific results considering local conditions. However, the integration of technology, structures and behaviour is a challenging task that had been supported by learning processes of various types throughout the project:

- > Cities – cities: study visits, local dialogue forums, opponent groups
- > WP leaders – cities: workshops, skype meetings
- > Experts – cities: city groups

Using local potentials: smart city, smart people

According to PLEEC cities, the key factors for a successful process are:

- > Strong organization
- > Involvement of stakeholders
- > Continuous communication with stakeholders and decision makers
- > Sufficient budget
- > Clear focus

The focus on integrating new instruments of collective sense-making and learning, activating local resources and potentials as well as self-organization and management has been proven to be a crucial task within the planning process. But why is there a need for these new types of planning and steering processes for cities? Generally spoken, the smart steering of urban development leads to (economic) growth effects by specialization, niches and unique positions. Furthermore, a general trend that ‘authority power’ is more and more forced to give way to ‘network power’ (Healey 2005:146) can be observed. However, networks are not instruments in the sense of ‘traditional’ planning instruments but planning is embedded in networks offering opportunities and – at the same time – limiting them. New forms of

transferring knowledge into action and policy on the basis of a governance-approach:

„Such a city (a network city, note of author) is not dominated by one or a few groups. At the same time, its underlying logic – of things potentially linked to each other in functional ways – facilitates intervention. Democratic planning and network cities make sense together.” (Beauregard 2005:32)

Traditional structures and instruments of urban planning are at a loss, e.g. due to deregulation processes (see Helbrecht 1994), increasing privatization of municipal tasks (“entrepreneurial city”) and the importance of (new) ICTs, changed role and perception of information in general. Consequently, the process of urban planning is altering:

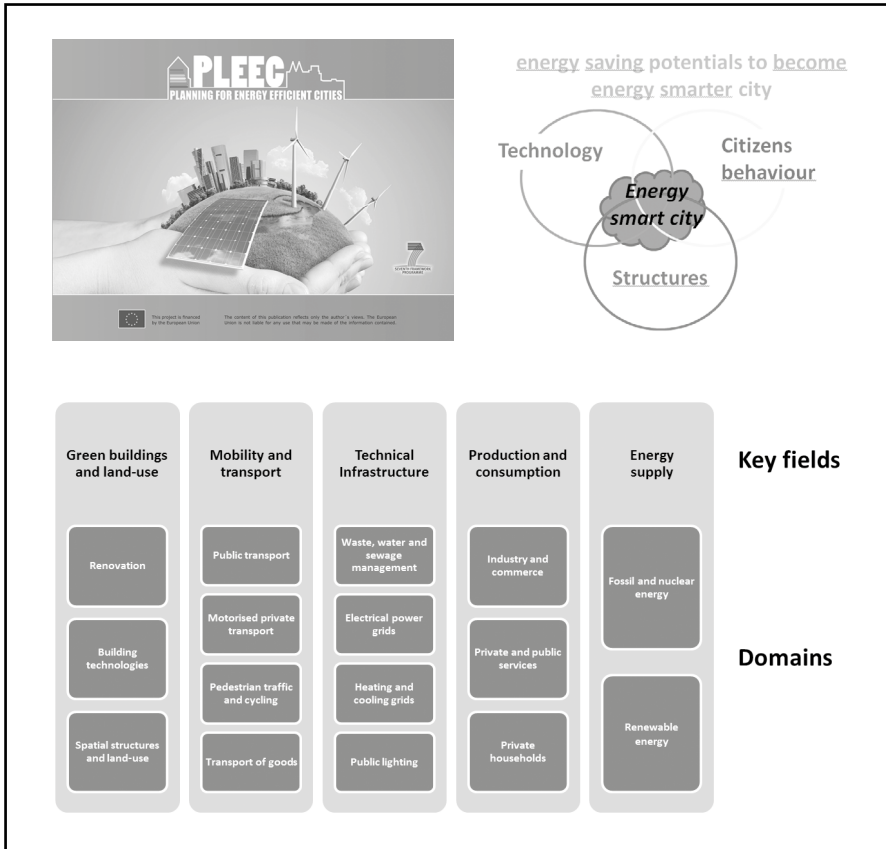
- > The control function of urban planning and regulatory functions by means of land use plans etc. is supplemented
- > (creative and flexible) combination of different strategies is necessary in a network society
- > Plans promote a certain vision and providing information to convince the target groups and provide a framework in order to reduce uncertainty

It can be observed that plans often not so much serve as detailed guidelines for action, but rather aim at promoting a certain vision and providing information to convince the respective target groups (Schindegger 2009: 168).

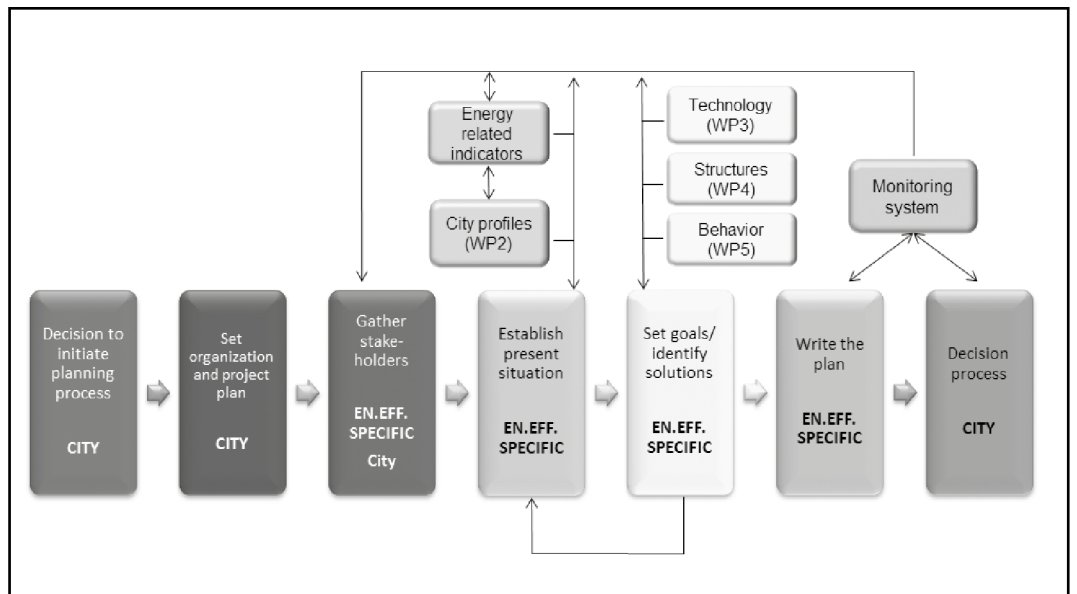
Furthermore, they provide a framework in order to reduce uncertainty (Elcock 2008: 78). Pro-active urban planning deals with this political dimension of urban development by applying instruments of strategic positioning. These new modes of socio-economic regulations in order to ensure effective performance and to mediate between conflicting interests as effective political steering needs market mechanisms and self-organization as alternatives and amendments to the (hierarchical) system of the nation state.

A.
Basic understanding of the PLEEC-project; key fields and domains of an energy efficient city
Source:
<http://www.pleecproject.eu/>

B.
PLEEC-model v2.0 (work in progress)
Source:
Gudrun Haindlmaier



A.



B.

Summary and outline

If one tries to operationalise the previously mentioned definition of a 'Smart City', one is dealing with a city well performing in a forward-looking way in specific key fields of urban development, for which the path of development is decisive. Efforts improving performance in distinct fields of development are needed. Thereby, the challenge on city level is to activate the potentials through integration of stakeholders, consumers and residents and to transform them into assets that turn a city into a smart city. Following this approach, the advantages of a place based way of thinking has become very obvious: The urban innovation gives rise to the expectation that lock-in effects and rebound effects are less dominant because of the strong involvement of relevant groups of stakeholders in bottom-up and problem solving learning processes. Due to the learning process solutions should even support sustainable urban development so far these learning processes and the creation of smart communities are becoming a driving force of social inclusion.

An integrative planning strategy targeting at activating potentials of 'Smart people' should regard city as socio-technical system. This means that there is an interlink (not duality) between materiality (elements, functions and interactions) and social construction (perception, assessments, attitudes). In order to be a conflict solving strategy between environmental, economic and social systems, two factors need to be pointed out:

- > *Efficiency*: environment, labour, capital as scarce resources
- > *Justice*: distribution of wealth, environmental quality

Place based strategies need to focus on urban structures (material and environmental conditions), the urban performances as well as social values and attitudes. By doing so, sustainable and balanced development can be fostered instead of isolated solutions going far beyond technical innovations avoiding rebound effects and other unintended impacts.

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Smartness Inc.

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The powers behind India's first 'smart city' tell us that "land is not an issue". But with the neoliberalisation of space comes a disturbing transformation of citizenship via data and real estate.

On a scorching day in May we made our way to the much publicised GIFT (Gujarat International Financial Tech-city). Anticipation was building as we turned the car off the main highway into a byroad dotted with signs announcing the arrival of GIFT. One of my fellow visitors, who had secured an invitation to a corporate presentation in GIFT city, remarked how the landscape looked similar to Dubai: clean pavements without rubbish, manicured lawns, mature trees that did not grow natively in the region, and a general absence of people on the roads. There was a reason for that last observation – GIFT was not yet complete. All it had to speak for its 'smartness' was an artificially created landscape that led visitors to a newly completed set of twin towers. That and its gate, where we were stopped to identify ourselves to the security guards.

The 'first' smart city

GIFT has been widely reported as the first smart city in India – apparently a model for the country's 100 smart cities slated to be built over the next few years. The city is the brainchild of India's current Prime Minister Narendra Modi who visited Shenzhen in 2006 and was inspired by Chinese urbanization. GIFT was born out of a desire to create a global financial centre which would tap into India's 'unlocked potential', attracting foreign investment in Gujarat. GIFT is India's answer to Shenzhen, and Gujarat's answer to Mumbai.

GIFT exudes a number of firsts. It claims to be the 'first' global hub for domestic and international financial services. It will have India's 'first' district cooling system, first smart fire station,

first 24/7 supply of drinking water straight to domestic taps and first smart service tunnel carrying all the fibre optics the city needs. And it will have the first on-site data-centre storing byte-size pieces of information, harnessing the advantages of 'big data' once the city is occupied by its projected population of 3.2 million. But GIFT did not start out as a smart city. Like the concept of the 'smart city' itself, GIFT's chequered career has undergone several identity changes. It was initially conceived in 2006 as a city that catered to the finance sector, with a view towards attracting global IT sector workers, relocating from global cities like London, New York and Mumbai, and attracted by the prospect of capitalising on low rents and service costs.

Unsurprisingly, GIFT did not receive any mention in the State of the Union Budget in 2013 and 2014 when its smart-city counterparts Dholera and Shendra-Bidkin were announced as federal state priorities. Indeed while the Dholera smart city was described on several occasions as Prime Minister Narendra Modi's 'pet project' – the city that got him the job and the precursor to the 100 smart cities initiative in India – GIFT did not receive much comment during the election campaign of 2014. It was only after the elections that the media began to report on various 'first' smart cities across the country, with being the 'first' one to stake a claim to smartness seen as a badge of honour. In late 2014, the media began to report on GIFT as another 'first' smart city.

Spread over 886 acres, GIFT is the 'first' mega-scale enclosure taking shape in India – a space of exception with over 400 acres of its land under special economic zone (SEZ) regulations. The SEZ is a misnomer since the primary service economy in this space will be financial, but its logics will apply as a different taxation system from other parts of GIFT.

It will have 110 buildings with at least two landmark buildings', two schools, a 150-bed hospital and hotels accommodating a total of 5000 rooms. The crowning glory of its 'smartness' will be the 'Samruddhi Sarovar' (translated as the 'Lake of Progress') which will hold water from the Narmada Dam and sustain the city's water demands for up to 15 days. Samruddhi Sarovar will also be the heart of the city's leisure and recreation space, producing high value real estate for lakefront development. Yet there will only be 30,000 residential units in the city. In other words it will be a giant central business district with a daytime economy akin to a 'company town'. Only that the extractive industries of nineteenth-century company towns have been replaced here with the business of capital extraction and accumulation. GIFT will be the first to capture and direct the aspirations and disposable income of young professional middle class Indians towards a form of ICT-based urbanism that has so far remained invisible in Indian public life.

The hubris of technotopia

GIFT compares its parameters to global cities such as London, Paris and New York, even as 'global cities' as an organizing hierarchy for cities in the world has become increasingly unpopular among urban scholars. GIFT also capitalises on the travelling concept of a 'smart city': the ideology of manufacturing and transporting a city in a box, to be packaged and then dismantled on site, making the site fit its exacting conditions. This, claim the GIFT senior management staff, is not just the smart way of doing new cities, but also a fast way of dealing with the impending urban age.

>>Figure A

Everything about GIFT characterizes speed – and speed is one of its markers of success. It takes its cues from China while endeavouring to surpass it. It gets frustrated with Indian planning structures which 'slow things down'. Speed is also evident in its aim to provide 'single window clearance' for all its development plans, as well as in its claim to give planning permission to buildings within 15 days. Once completed it claims to provide the fastest public wifi speed in the world, one-touch control

systems, fibre-optic connected homes, smart transport, smart waste systems, smart surveillance and e-governance – all monitored from a central command and control room. This is GIFT's technotopia.

But this technotopia is a hubris that refuses to acknowledge the challenges of ICT-enabled urbanism and learn from the lessons of those other smart cities which it cites and seeks to emulate – Masdar, Songdo, Singapore and so on. The technotopia that GIFT loudly and unapologetically aspires to is a menacing urbanism where every aspect of public and often private life will be visible, recorded and monitored. In the words of the senior management's presentation to us: "You are welcome to come to GIFT, but we will be watching you". This resonates with a recent statement made by Laveesh Bhandari, the chief economist of Indicus Analytics, who observed:

"When we build these smart cities, we will be faced with a massive surge of people who will desire to enter these cities. We will be forced to keep them out. This is the natural way of things, for if we do not keep them out they will override our ability to maintain such infrastructure. There are only two ways to keep people out of any space – prices and policing."

GIFT is a hyper-entrepreneurial enclosure that will require pricing and policing to keep the 'dirt' (both material and metaphorical) away, the 'dirt' that currently plagues the streets of existing megacities. While every person is theoretically allowed entry into GIFT, they will also have to pay a price for this 'privilege'. Each visitor entering GIFT will have to provide their biometric data, and expect to be accosted by security if they diverge from the expected route to their destination. This privilege comes from a close alignment with business interests. Instilling confidence in global investors around the prickly question of security is more important than adhering to those existing legal and democratic planning instruments which ensure a modicum of rights.

"Land is our primary resource"

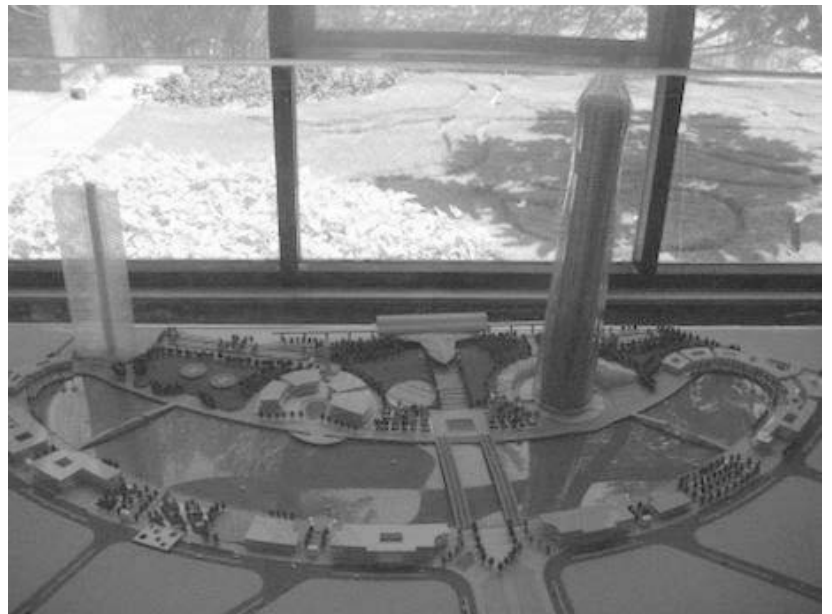
Shutterstock/Maglara. All rights reserved.
In response to our questions concerning how

A.
Source: Ayona Datta. All rights reserved.

B.
GIFT CBD model
Source: Ayona Datta. All rights reserved.



A.



B.

the land was acquired for building GIFT, the city's senior management repeated the mantra: "land is not an issue". This was paired with another claim that "land is our primary resource". We were told that GIFT land was not fertile or cultivable, that it was wasteland, and that it had already been acquired by the Gujarat state when it was transferred. These claims were made to legitimise another important claim: that GIFT has not seen the same level of protest and resistance as its Gujarat counterpart, Dholera smart city. Taken together, these claims attempt to legitimise an argument around GIFT smart city as both a networked city and a 'just city' – a city built without large-scale land dispossession. This was touted as its unique selling point: a city that could be built faster since there were no 'urban politics' and thus no roadblocks to its materialization.

In a country where land is the primary source of livelihoods for millions of agricultural workers, it is significant that India's 'first' smart city will be built without a 'land issue'. In other proposed greenfield smart cities such as Dholera, Shendra-Bidkin, and several new townships, struggles over land have been the key marker of twenty-first century urbanization. Indeed as a smart city pilot project, it is GIFT that must set the trend. And so as an answer to India's urbanization, it cannot be seen to be grappling with the land issue. But if smart cities are made by ICT, then why do they have such a primal need for land? Surely if becoming smart in other aspects of life (smartphones, smart TVs, tablets) also means that the sizes of things are decreasing, why are smart cities in contrast being conceived as bigger than existing (presumably unsmart) cities?

These questions can be answered by finding the links between two major moments currently unfolding across India's political and social landscape: the 100 smart cities programme and the new Land Bill. While the two have been reported separately with no obvious links drawn between them, it is the land question – 'is land a public commons or a public good?' – that makes this more than just a tenuous link. While the smart cities programme seeks to create 100 new brownfield and greenfield cities across

India's territory, the new Land Bill seeks to revise a colonial Land Acquisition Law (which has seen a number of revisions already) to remove the consent clause before acquiring cultivable fertile land while providing market values for this land to the farmer. The implications are huge. Land is now at the service of 'development' – the forces of industrialization, urbanization and foreign investment. And so enter the smart cities.

The idea that land acquisition needs to be lubricated before smart cities can be built has been floated several times in policy and governance circles. While the Indian state will not be able to invest financially in its smart cities, the biggest 'resource' they can provide is land. It is no wonder then that the state is involved in the process of acquiring more and more territory in the name of 'public land'. Gujarat has been leading this process, acquiring huge swathes of land across the state over the past few decades. Mathew Idiculla suggests that this is driven by the demands of foreign investors who might be sceptical of 'politics' (social resistance from local farmers) which might present roadblocks to investment. Gujarat's answer to investors has been "land is not an issue" and "land is the biggest resource we will give you". Once land is available to the investor, everything else can follow.

The state is now actively involved in the manufacture of territory through new laws and policies which will dismantle most democratic planning and regulatory structures for the sake of urbanization and economic growth. Farming is not an occupation that Indian middle class youth aspire to, rather it is at the cost of farming that urbanization will flourish in India. As a recent article in the Guardian observed, the convergence of increased farmer suicides and the proposed land bill implies that we are "losing not just land, but a whole generation of farmers".

India might claim to be turning towards a new urban age, but the Indian state is also actively manufacturing urban territory to legitimise these claims. The neoliberalisation of land has been the top priority of elected governments

for some time. And with it comes the redrawing of the lines between city and countryside, centre and periphery, farmer and urban citizen, smart and sluggish.

A recipe for social apartheid?

A recent article in the Guardian asks whether India's 100 smart cities will be a recipe for social apartheid. There is a strong technophile lobby which believes that smart cities will produce smart citizens, empowered through open data to make the right decisions in their daily lives, able to pay bills online, access health information and even prevent rape. An alternative lobby believes that, despite its aims to control and digitize every space, the smart city in India will have its own urban leaks, that it will be hacked from the bottom up, to be appropriated in its own terms. Yet both scenarios rest on a core assumption that every citizen in the smart city is literate and has access to ICT. The reality is somewhat different.

Every citizen who occupies space in the smart city will be selected on the basis of their capability to do all of the above. This does not imply an active selection. Rather this selection will be implicit by virtue of the city catering to a 'target' citizen. In this process, citizenship will be reduced to the use value of the city's inhabitants: they will be citizens in so far as they can be useful in aiding data capture and the silent capitalisation of their privacy. The seduction of digital citizenship will sustain as long as citizenship can be reduced to byte-size pieces of information that can be processed and mined for economic value.

>>Figure B: GIFT CBD model

This is the technotopia of digital citizenship, a make-believe world where everyone is deemed to be equal on account of their access to digital space. This is the image that GIFT presents us with. When we asked how the ordinary Indian might identify with the city, the response was: "We are not building this for the ordinary Indian. We have to promote facilities which people are affiliated to. Since our competition is with Dubai, Shanghai, Singapore and so on, we

have to give them the comfort of doing business in the same environment." GIFT unapologetically promotes its privilege, the manufacture of citizenship via data and real estate. As already observed about smart cities elsewhere, there is little space here for those on the margins.

GIFT city has four simultaneous roles. It is a developer, a corporator, a power company, and a law and order machine rolled into one. On one hand it transforms 'undeveloped' land into developed real estate with infrastructure, collects service tax from the development rights it transfers to different leaseholders in return for infrastructure services, and on the other hand provides private surveillance and crime prevention services as a city corporation. All this in a city with a population but no citizens. Although GIFT will theoretically have a Mayoral office and corporators, given the nature of the industries it will be a city which is largely employment based. Its employment base is expected to travel to GIFT from neighbouring cities and villages to work each day. With only 30,000 residential units planned for GIFT, the Mayor will not need to be unduly worried about local elections. In the words of the senior management: "the beauty of this lies in the fact that the city will have no voters".

A.
**Day 2 - Discussion Panel 2,
at TU Berlin**

I.
Dholera Special Investment
Region

B.
**Colin McFarlane in the
discussion of Panel 2**

C.
**Gautam Bhan in the
discussion of Panel 2**



A.

„My question is partly linked to what all of us see as (?) “alternative smart” and also partly to this questions of resistance which has come up quite a bit. Because what has always been striking about smart cities is the power of the image. Obviously Alberto talked a lot about the performativity of imagery. What the bad guys have - Cisco, IBM and so on - are really seductive images that even, despite our powerful criticisms we are all a little bit seduced by them (...). I don't want to live there but it looks cool. So We have imagery. So I really think when it comes to the question of resistance and alternatives that new knowledges isn't quite going to cut it. I think we need to be able to play that game at some level. (...) We need to actually produce alternative planning mechanisms that are knowledge based but are also, and I think that is important, visual. Like maps have the images that show people this is what your city might look like, or for that matter your village or your farm. So I am asking what is the rule of the image or the aesthetic? That kind of comes back to Alberto in building resistance and alternatives to that kind of stuff.“

B.

„Adding to what Colin said, Dholaveera¹ predates the smart city imagination by 10 years. It began as a special investment region in the imagination of 10 years ago the debate that would have happened in this room was about special economic zones and enclave organizations. India learning from the China model of building spaces of exception where rules of everyday governance did not apply, where voting did not apply, where old political checks did not apply, because they were spaces of special economic exemptions. And what's fascinating about Dholaveera¹ is that the game that was played by the planners when the smart city imagination came out was to reframe a story of industry, productivity, world class city, which was the 10 year ago fight, into the smart city imagination wielding an aesthetic towards exactly the same end. Yet our resistance to it is not nearly as nimble, is not nearly as quick. It's not nearly as mindful of the imaginary's political and symbolic power. Our claims are very familiar, but the terrain around us is constantly shifting. So to me it goes back to this question of not just saying what is the new practice and what is the new imaginary, but saying what specifically about this imaginary enabled this story of a land dispossession, which is an older story, to be told as if it is a new story? It is the disguise that I think does the political work.“

C.

PRACTICE / SPACE PRODUCTION & PRACTICES OF URBAN COMMONING

Panel 3

Colin McFarlane

Friederike Habermann

Gautam Bhan

**Introduction by
Sybille Frank and
Jörg Stollmann**

In this session we would like to put the emphasis on PRACTICE. Diverging slightly from the path of earlier discussions today – the questions on hierarchic versus horizontal organization, on regimes of discipline versus regimes of control, and on implications for governance and politics – we want to look at how people redistribute urban resources and actively reconfigure urban spaces in order to create and foster an urban commons.

We are particularly interested in discussing an inclusive understanding of the city as a place shared, negotiated and fought over by its inhabitants. This city would have to be discussed under the notion of it being a common good rather than a product of smart technologies, professional

management and consumption supplies, a product that is populated by “users” or “consumers”. In his recent book on “Rebel Cities”, US geographer David Harvey defined the commons as “an unstable and malleable social relation between a particular self-defined social group and those aspects of its actually existing or yet-to-be-created social and/or physical environment deemed crucial to its life and livelihood” (Harvey 2012: 73). For Harvey, commons thus denote a social relation that is of collective interest and that necessarily needs to act itself out off-limits to the logics of capitalization and marketization. Harvey continues to argue that, however, the entire history of urbanization has to be interpreted as an ongoing destruction of the city as a social, political and cultural commons – a destruction that has been driven by capital (Harvey 2012: 80). Consequently, in today’s times of advanced capitalism and highly developed neoliberalism, strong political and social action is needed on the part of the citizens to (re-)appropriate urban goods and spaces for common purposes in order to (re-)define them as urban commons.

Up to now, the new discussions on the commons have largely emerged parallel to the widespread use of information and communication technologies. Open Data, crowd-sourcing and -financing, digital tools to renegotiate and share resources have steered the debate on the initially spatial and physical concept of the commons. In this session, we would like to open up this discussion to broader practices of commoning, and to the creation of alternative spaces. Building on Michael Hardt and Antonio Negri, who regard the entire “metropolis as a factory for the production of the common” (Hardt/Negri 2009: 250), we would like to put the subversive, but often uncherished commoning practices of “smart” people center stage in this session. With the help of our speakers, we want to look at bottom-up forms of knowledge production and sharing, at new practices of association and cooperation, and at canny ways of producing new urban common spaces. In doing so, we would like to probe whether there is a way to redefine the Smart City as more accessible for its inhabitants, and as more malleable and more democratic. Last but not least, we would like to discuss the opportunities and challenges that derive from a reconceptualization of the Smart City that puts ordinary people at the core of the debate as “smart people”.

Along these lines, three major questions will be discussed in this session:

- (1) What is the relation of urban space and practices of commoning – how is space renegotiated and reproduced by urban commoning, for example through the use of information and communication technologies?
- (2) Are those practices related to a different notion of economy and politics of space?
- (3) In putting people center stage we do not postulate that everything people do in urban contexts is “good” as such. On the contrary, we also intend to interrogate current practices of urban commoning with a view to a potential promotion of new or existing social inequalities. Can practices of urban commoning be generally conceptualized to bring about a more inclusive urbanism? Or do they seem to largely push forward the interests of “traditional” privileged social groups, such as the well-off urban middle classes?

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Towards more Inclusive Smart Cities?

Digital Fragments in the Slum

Colin McFarlane

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Introduction

To what extent and in what ways might the growing discursive and practical experimentation with digital technologies help augment the urban commons? How might what is – rather unhelpfully, I will suggest – often called the ‘smart city’, be levered into a more inclusive distribution of resources and opportunities in cities? In this paper, I reflect on these large and open questions with specific reference to forms of emerging experimentation with digital technologies in informal settlements. I use the term ‘commons’ here, as opposed to say ‘public’ or ‘inclusive’, because I have in mind the organisation of life, resources and knowledge in ways that distribute them fairly across different groups (Gidwani and Baviskar, 2011; Jeffrey, McFarlane and Vasudevan, 2012).

Smart urbanism is a loosely connected set of confluences between data, digital technologies, and urban sites and processes. The promise continually sold is of the digitally-enabled data-driven, continually sensed, responsive and integrated urban environment. Central control rooms, such as IBM’s Rio control room (Luque and Marvin, forthcoming), are imagined as constantly monitoring the distributed city, thereby bounding it as a manageable totality

through real time data: spaces that integrate the governance of infrastructures in ways that are constantly up to date and actionable. Densities of people, traffic, goods, even weather – such as in flash flooding, in Rio’s case – are managed here (so the claims go) through a new urban informatics, increasingly premised on algorithms that articulate and represent large data sets, and which are inter-related through integrated governance based on new ways of seeing urban space.

This is a promise of managing the intensities and heterogeneities of urban life through sensing and data, and at a discursive level at least it has proven immensely successful as municipalities and governments across the world declare significant smart urban initiatives, whether in relation to particular sectors like energy or in relation to the city as a whole, from Glasgow, Bristol and Amsterdam to Boulder, Rio, Delhi, and Cape Town (e.g. Dutta, 2015; Kitchen, 2014; Marvin, Luque and McFarlane, 2015; Watson, 2014). What remains to be seen, however, is the extent to which the smart city agenda is anything other than another instantiation of corporate power grabs, entrenching surveillance, private control over urban management, and repacking

neoliberalism in the dressing of seductive technologies and reimagined municipalities and citizens (Greenfield, 2013).

To find instances where more progressive experiments are being forged that nudge towards a more socially inclusive urban commons, we often have to look to urban peripheries of different sorts – in this case, to the informal settlement.

Smart urbanism: an open agenda?

Despite the declarative announcement of the label ‘smart cities’, what we see more often in practice is less a decisive shift in urban governance, economy, social life or environmental management, more a set of quite specific interventions in these different arenas which are best characterized as limited, often uncertain, and connected to existing place-based or organization-based logics, ideologies and debates (Greenfield, 2013; Townsend, 2013; Marvin, Luque and McFarlane, 2015). Part of the challenge in ‘seeing’ actually existing smart urbanism is the very discursive operation of smart itself, to look past the boosterism – whether that boosterism is driven by the state, corporations, civil society organisations, activists or residents – and instead critically examine why and how smart urban discourses and practice emerge and what they do and don’t do. In this sense, the starting point is to open the ‘black box’ of smart urbanism and ask: what’s really going on here and what might it amount to for urban politics, economy, environment, and everyday life?

Dealing with the notion of smart is part of the challenge then. ‘Smart’ is a concept that comes charged with positive and aspirational connotations. It is a radically networked concept, and pulls across a range of different discourses – economic growth, optimization, sustainability, efficiency, better service provision, greater and more transparent citizen access, security, and so on. It appears, then, as a useful and seductive concept. Who does not want to be seen as being smart? The use of smart as a concept normalises a set of aspirations and an aspirational vision of the future, even if what that future is exactly, and how it might be attained, remains somewhat elusive.

In practice ‘smart’ refers to a particular form of information flow: dense information usage flowing in multiple directions and offering new possibilities for recombination. But does smart urbanism, a convenient short hand to be sure, ‘add up’ to a generic process as such? What is often striking about smart urban initiatives run by city councils is the level of contingency and uncertainty sometimes found around what smart is and how it might evolve. Often, it seems that there is less a sense of clear vision around smart – despite what the glossy websites and videos of the urban future might suggest – and more a sense of bumbling through, a sense that ‘smart matters’ but without any real clarity about why and how, or any certainty about how and why to get different groups working together, from government departments to civil society groups, private companies and ordinary residents.

If there is a generic sense of smart here it often lies in a sense of following a kind of smart script, from developing control rooms (often with Rio in mind) to sponsoring hackathons and simply getting data ‘out there’ in the public domain. Here, smart emerges not so much as a linear logic but more haphazardly as a domain that cities must be seen to be involved in, and of course there is often opportunity for raising resources in this area. Cities might move from funder to funder, demonstration project to demonstration project, and the promise of the smart urban revolution is that it is always almost there – emergent, yes, but rarely quite arrived. This loose, contingent, broadly shared script of smart is shared from Cape Town to Glasgow. Given this, academic researchers have more potential to populate the vision and practice of smart urbanism than we may assume.

Part of the opportunity for constituting the agenda of smart cities lies in researching and developing how a wider range of actors are using digital technologies to pursue a more inclusive urban commons. Urban life is increasingly rendered visual, sifted through data and represented in all sorts of ways (maps, charts, rhythms, intensities, numbers, comments, etc.). As Nigel Thrift (2014: 3) has argued, “the prevalence of data makes it much easier to compile

lists of objects and to map them, to produce encyclopaedic renditions of things and to account and curate them, to map out space as a polytheistic pantheon of urban life, understood as a great ‘meanwhile’ (in the sense of ‘meanwhile this was happening, and this and this and...’).”

Urban planners, policy-makers, practitioners, corporations, residents and activists are increasingly inundated by and producing visualisations of a mobile urban world, often in real-time, from representations of global information of urban migration and energy infrastructure distribution, to global images of air pollution mapped on to densities produced by organisations like NASA (2014) to build inventories for air policies, to the increasing use of urban heat maps in economic calculations (e.g. EPA, 2014), to a whole variety of online real time data sources tracking different dimensions of urban social life such as health geographics in aquarium diagrams (e.g. Guagliardo, 2004), the proliferation of experiments mapping urban perception, such as MIT’s Place Pulse which maps perception of safety amongst other things (<http://pulse.media.mit.edu/>), to the production of new e-social densities discussing preferences such as Foursquare (<https://foursquare.com/>), and groups analysing the resulting data from sites like Foursquare and Facebook to produce psycho-geographies of different cities, such as We are here now (<http://weareherenow.org/>). An important trajectory in this moment of experimentation is the growing number of initiatives that use the digital to forge new social and political openings for the urban commons in informal settlements, and it is to this that I now turn.

Digitising slums

There are two immediate key trends through which smart cities engage with informal settlements and may be used to further the constitution of the urban commons. The first is to do with sensing urban infrastructures. For example, there is some potential in the use of sensors to measure water flows through pipes that trigger alerts if water use is outside of an expected normal range (McQuillan, 2014; <http://www.libelium.com/smart-water-wsn-pipe-leakages>).

Such data can be made publicly available and as such could be used by residents and activists to hold states, utilities and private providers to account. Mapping water networks by distribution and volume may allow, for instance, activists to more effectively combat state claims that adequate water is being provided, or suggestions that it is the poor rather than say the state and/or inadequate maintenance that is to blame of low water supplies (Graham, Desai and McFarlane, 2014). There is currently something of a gulf between these types of developments and actual application within informal settlements, and there is certainly potential here, but we also need to be mindful that such developments could do more harm than good.

For example, ethnographic research on water in informal settlements has shown that not only is the provision of water supplies closely linked to political and social differences based on gender, religion, class and caste, but that closer formal state control – for example through legalizing water in ‘illegal’ neighbourhoods – can have very uneven results, serving to improve conditions for some while entrenching exclusions for others (e.g. Truelove, 2015; Bjorkman, 2015). It is vital then that any provision of smart sensing technologies in this context be handled with extreme care, and rooted in a strong understanding of the spaces, lives, politics and economies of informal settlements. To put it another way, the most likely route through which smart technology might facilitate the constituting of more commonable resources like water in informal settlements is if interventions begin with the place and not with the technology.

The second engagement of smart technology in informal settlements follows on from this point in that it takes the place of the informal settlement to be central: the digitalization of slum data. Smart technology in the context of informal settlements is foremost a question of up-to-date data. This takes a variety of forms, but the emphasis across different initiatives is the production of real time maps and the use of data to build partnerships for improved infrastructure, services, and housing. In addition, these initiatives often seek to forge alternative social representations of informal settlements in order to challenge stigmatized narratives and images.

'Smart' here is less about intelligent infrastructures and more about producing digital data to improve basic infrastructures. At the same time, these initiatives constitute a foundation for future smart city developments.

It is no accident that data generation is at the centre of emerging smart city efforts in informal settlements. One of the key challenges in the provision of infrastructure, housing and services to informal settlements – aside from the question of political will on the part of the state or the pressure on land from speculative investors (Davis, 2003; Goldman, 2011; Sassen, 2014) – is a lack of data (Joshi et al, 2013). Three examples will serve to illustrate the sort of initiative I have in mind: mapping and multi-media activism by Map Kibera in Nairobi, infrastructure audits by the Social Justice Coalition in Cape Town, and mapping and enumeration 'Know Your City' initiative of Slum Dwellers International with the Santa Fe Institute (and there are other relevant examples not discussed here, including Transparent Chennai [<http://www.transparent-chennai.com/about/>] or the Hyderabad Urban Lab's work on mapping and analyzing a variety of issues including transport, gender and toilets [<http://hydlab.in/blog/notes/interns/public-toilets-in-hyderabad-an-audit/>]).

The Map Kibera initiative entails the digital real-time open mapping of local amenities and resources. The group has made public a whole series of maps, from those identifying general features like pathways, clinics, water points and markets, and those focused on specific issues like sanitation facilities or health provisions. Over time, the group's work has expanded from mapping to the production of a local news service that makes public different perspectives from Kibera's residents through online video, blogging, and reporting. This work has involved not only publicizing and sharing knowledge but forming collaborations with civil society and governmental groups.

The Social Justice Coalition (SJC) is a movement that campaigns and researches on rights and provisions for the urban poor in Cape Town. A significant part of the movement's work has been focussed on sanitation conditions and budgeting in townships, especially in Khayelitsha where it is based, and in informal

settlements (Odendal, 2015). In order to produce data through which to combat the city council's claims about sanitation provisions in Cape Town – claims which are typically very positive about the level of provision and maintenance – SJC decided to audit sanitation conditions in Khayelitsha, including the level of provision, the spatial distribution of toilets, the level of maintenance, the conditions in which maintenance staff are forced to work, and the views of residents.

The surveys, which involved residents and activists inspecting toilets, were then produced on digital maps and tables. Alongside this, SJC is developing a system of online reporting of sanitation conditions that supplement these online maps, whereby residents can use smart phones to upload information about dysfunctional toilets, inadequate maintenance, and related issues, to what becomes a powerful real time data set. One of the consequences of this data is that SJC has been able to question the city's data and budgeting allocations in a more vigorous way, much to the chagrin of the city authorities.

The Slum Dwellers International 'Know your City' initiative, which is run with researchers at the Santa Fe Institute, is ambitious and exciting, and aims to provide interactive data on 6000 informal settlements. This is a whole set of census data collected by groups of the urban poor about their own neighbourhoods – demographic, spatial and economic, from infrastructure provisions across space to livelihoods – which can be used to inform upgrading programmes with up-to-date data and to develop partnerships with local states. Like the SJC data, the strength of this data as a negotiating tool is that it speaks the language of the state. It is more difficult for the state to ignore quantitative and mapped data, especially in the easily movable form of digital maps, than it is to ignore more qualitative calls for social inclusion. For SDI activists, such data is vital to developing partnerships where the actual realities of the lives of the urban poor are placed at the centre of discussions, and in an accurate way.

It is important to point out here that while data developed through digital technologies across all three of these cases has a kind of agency both in its form (it can easily circulate) and in

its impact (it can have a visual power that influences thinking and practice), the politics of the data is shaped less by the data itself and more through the conceptions of the urban political at work in the different movements. Across all three cases, there is a political starting point: that of the different forms of the active, continually informed, responsible citizen. The notion of enhancing citizen action through data is important to each movement. Alongside there is a particular conception of incremental politics at work in all three cases, even if the form of that politics differs across the initiatives: with Map Kibera, a politics of empowerment, with SJC, a rights-based politics of citizens holding a state to account, and with SDI, a long-term process of partnerships between states and an entrepreneurial urban poor.

Across these different initiatives is a commitment to incremental, real time data that can be tinkered with and politicized. In this sense, the form of data digitalization here mirrors the broader practice of incrementalism that characterizes informal settlements more generally (McFarlane, 2011; Simone, 2008; Pieterse, 2008), here in the context not of adjusting water or electricity connections or of gradual alterations to housing but of data collecting, sifting, translating and fusing. But there are also resonances between these initiatives and more explicitly mainstream smart city strategies, a kind of infrastructural mirroring between mainstream and alternative.

On the one hand, there is the prospect here that the incremental logic of slum urbanism carries forward into a more radical politics towards an urban commons through more inclusive urban policy and practice, of what Edgar Pieterse (2008: 6) has called 'radical incrementalism': "Surreptitious, sometimes overt, and multiple small revolutions that at unanticipated and unexpected moments galvanize into deeper ruptures that accelerate tectonic shifts of the underlying logics of domination and what is considered possible".

And yet on the other hand, there remains a question about the extent to which these interventions actually represent 'alternative forms of smart cities. While the actors, practices and aims at work here are largely distinct from more corporate strategies of smart urban

redevelopment, there are certain characteristics that are shared across mainstream and alternative strategies. In particular, at work across mainstream and alternative smart strategies are shared principles of transparency, information-sharing, visibility, real-time engagement, coordination, and responsiveness. This infrastructural mirroring is a route through which digital politics generated from the informal settlement might help shape the larger smart city agenda.

Conclusion

I want to end with four key points for thinking through the potential of smart technology to the constitution of a more inclusive urban commons in which the informal settlement is a central rather than peripheral consideration. First, all three examples illustrate the need to start with the neighbourhood and not with the technology. Technological approaches that are layered into informal settlements that don't understand the everyday life of the place, the struggles and needs of the residents, and the long term trajectories of incremental development, are likely to miss the target. Second, given the discursive power of the holistic term 'smart city', it's important to move past the label to think more of something like 'smart fragments'. If digital technologies are to assist grassroots practices of commoning, then they must operate as part of a conjuncture of different interactions that enter into urban activism.

Third, and while digital technologies have sometimes unexpected agency, they are more likely to be shaped by conceptions of the urban politics than to shape urban politics themselves. This is a reminder of the specificity of digital technology – it's important, and useful, but ultimately the political preoccupations that residents and activists themselves hold are likely to trump whatever seductive technology is presented: it is people, politics, and place that matters most. And fourth, and to follow on, there are lessons that can be learned from social movements such as the three above in how to place smart technology as part of the process of urban commoning. In particular, it is the commitment to slow, incremental learning through groups and networks, and to positioning technology as one amongst several different practices that work together in (re) constituting the urban commons.

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ScarCity

Friederike Habermann

Cities become scarCities as urban commons get lost due to traffic as well as due to privatization. But also, more and more smart people create urban commons. This is made easier by, but is not limited to digital technologies. Be it by sharing things, by creating an alternative transport infrastructure or by providing naturopathy: It is a commons, if it is open for all and as long as the people provide it without exchange logic. Often this is not a feat of conviction but nevertheless a promising spirit of the age.

The focus on the Gross National Product entails that the decrease in much of what is not measurable in monetary units is being made scarce. Wolfgang Hoeschele (2011) speaks of Scarcity Generating Institutions: It is often the so-called 'immaterial assets' like fresh air or recreation in nature, which are made short by focussing on monetary flows – whereby Hoeschele rightly claims that a beautiful landscape is not less but more material than money (Hoeschele 2011: 5/19ff). The Italian economist Stefano Bartolini analyses this mechanism as a set of vicious circles, calls it Negative Endogenous Growth, and refers it especially to cities (Bartolini 2010). Not least because of the traffic as well as the privatization of places it was becoming increasingly impossible for people to spend their leisure time in their own urban environment. In modern cities, things of quality (like beautiful homes, smart nightspots, enticing shops, entertaining shows) would be private and costly, whereas common and free things (the social climate or the streets and squares, which are noisy, polluted and dangerous because of traffic) were degraded.

Modern cities responded to the poverty of free or low-cost meeting spaces with an abundance of expensive opportunities for time off. Thus, people with a lot of money had access to the full kaleidoscope of urban entertainment, but for those with little money, television was about the only thing left.

In this Bartolini sees a formidable incentive for increasing one's income that in turn fuels economic growth. In this way, so I would add, the city turns into a scarCity – and also the reference to being scarred is chosen deliberately: ScarCities are deformed cities.

Creating Commons by Commoning Practices

But there are practices by smart people to turn scarCities into smart cities full of commons. This is what Sybille Frank and Jörg Stollmann have referred to in their introduction to this session, quoting Michael Hardt and Antonio Negri who regard the metropolis/ the city „as a factory for the production of the common” by commoning practices (Hardt/Negri 2009:250).

A few examples. Let's start with garbage. With the garbage when it is still offered for sale in department stores. Marianne Gronemeyer, an author from Austria, rightly points out that these days we are producing always for the dump. Industrial products are manufactured not for its usefulness, but – thus the logic of growth requests – for its fastest possible uselessness (Gronemeyer 2012). And she wonders what happens to people that live in a society dedicated to the production of garbage. Two weeks ago, my partner got a new sofa, or, rather, a whole sofa-arrangement. Yet, it is not precisely 'new' – we've got it via free-cycle, an email-network, on which objects which someone no longer needs are being passed on without exchange logic.

Two years ago, I got my own sofa-arrangement via alles-und-umsonst.de – a website called everything-and-for-free, following the same purpose. Recently I was in Mainz – a southern German city of 200,000 inhabitants. I was told that no fewer than 20,000 of them are a member of the local Free-Your-Stuff community¹ – again a web-based network for exchanging things that someone does not need any more, without the logic of exchange.

Why is that? Exchange logic, too, is a scarcity-generating institution, which means: Those who have little or nothing to offer still do not get what others have in abundance and who simply are not able to make any use of. Already in the year 2000, the economist and futurologist Jeremy Rifkin wrote a book called *The Age of Access*, in which he argues that given the abundance of products people do less and less accept artificial scarcity by excluding those without enough money.

Of course this does not mean that the nature-paths of the Berlin-based Friedelpraxis would be happily give treatment to a millionaire for free. Also, it is neither about charity nor supporting a ‚stinginess-is-cool‘-attitude but based on the idea of reciprocity. So while normally there is no requirement at all for being allowed to participate in resources provided, e.g. the demand of the Berlin based ‚Leihladen‘ (a shop for lending) to contribute with at least one item can be rather seen as a symbolic reminder that anyone can and should try to contribute to the maximum utility for everybody. This is not to be confused with an exchange logic of equivalence.

Behind this we can see the concept of commons as it is being refined by activist-academics as a new foundation for the entire economy – this is why I speak of the following principles as ‚Ecommony‘. In recent years, commons became the central term in debates about radical economic alternatives. Although there might have been even more discussion about commons in the Anglo-Saxon area than in the German-speaking, I would argue that the fundamental element in its definition is a distinction that is blurred in English as well as in the German everyday speech, but that is

precisely defined in the German law: between ‚Besitz‘ and ‚Eigentum‘ (I consider this as the first principle), more or less between ‚possession‘ and ‚property‘. While the relation to an object as ‚Eigentum‘/property is mainly abstract and refers to being able to sell it or to exclude others from the use of it, the relation to an object as ‚Besitz‘/possession is characterised by being somebody who uses it. The landlord is ‚Eigentümer_in‘, the renter is ‚Besitzer_in‘.

The squatter movements have always questioned the concept of Eigentum/property in unused houses. The wiki rechtaufstadt.net (right-to-the-city) relates the project of ‚Instituting the Common‘ by Hardt and Negri as beyond the false alternative of private property and public property with „producing black holes in the system of property“; under this slogan, the wiki further reports, in March 2011, activists of the campaign „Flora bleibt unverträglich!“ (that is the squatted Hamburg-based social center ‚Red Flora‘ „stays incompatible“) have symbolically smashed the land registry entry of the Rote Flora in front of the land registry office, because they insisted that the squatted building could not belong to anybody else than those who are using it.²

Last year, the people of Berlin decided in a referendum that the former airport Tempelhofer Feld, right in the middle of Berlin, has to stay a common place – now it is forbidden to privatize any part of it, to build houses on it, or to put fences; allowed are: to plant trees, to play ball, to chill, to have a barbecue and also to participate as one of the 500 members in a community gardening project on 5.000 square meters, called ‚Allmende-Kontor‘.

However, commons are not restricted to houses or land; people follow the same principle with respect to any kind of item. Free shops – in the German speaking area we do have about one hundred, even here in the Technical University one is located – are the original and off-line version of virtual networks as free-cycle and free-your-stuff: places where you can bring what you no longer need and take what you can need; again without the logic of exchange.

1. Cp. <http://www.n24.de/n24/Nachrichten/Netzwelt/d/5128668/ein-zeichen-gegen-die-wegwerfgesellschaft.html> (18/09/15).

2. <http://kongress.rechtaufstadt.net/programm/events/37.en.html> (18/09/15).

3.
Accessed 15/06/15.

In Berlin one of these spaces is called ‚Schenkladen‘, ‚gift-shop‘ (not to be confused with what in German would be called a souvenir-shop; thus not for buying gifts but for getting gifts). But taking into account the distinction between possession and property, this is the wrong name. The respective item is not given from private property to private property, but from a commons perspective something falls out of my possession, because I no longer use it; in this understanding the name of the free shop in Potsdam near Berlin makes more sense: ‚Umverteiler‘, ‚redistributor‘. Because in fact the item is no longer in my possession, I bring it to the free shop so somebody else can take it.

And in order not to let food rot, just because it’s someone’s property, the web site foodsharing.de is booming. Here, people offer each other food beyond their own need. Meanwhile, this site was merged with lebensmittelretten.de, ‚rescue food‘, where the collection of discarded food from supermarkets is commonly organised. Commonly organised and open accessible are also those bookcases which in Germany and Austria not only are found in cities but meanwhile also in numerous villages; they follow the same concept: central places – old phone boxes, junction boxes or specially built works of art – where you can bring the murder mystery after reading it, and get whatever you want to read now. But again, there is no logic of exchange involved.

While hardly anyone will read the murder mystery twice, after knowing who was the murderer, one might want to reserve access to a scientific book. Here, then, a kind of library is the appropriate form, that is ‚parallel use‘ instead of ‚serial use‘. It is similar with the hammer that will be needed again after having used it once. In this case, here in Berlin you could share or get one with the help of the above mentioned non-commercial shop for borrowing and lending, Leila. A classic example of this is the drill, which otherwise is on average only up to 13 minutes of its life in operation. The virtual form of a ‚Leihladen‘ are user associations, where people offer hammers, drills or even the possibility to use their private washing

machine, as it is the case on fairleihen.de (a word play meaning ‚to lend fairly‘).⁵

Whereas the app-based start-up company whyownit.de failed to reach the critical mass of participants it needed in order to make money, fairleihen.de serves the same purpose by being non-profit and based on a decentral back-end. Instead of remaining in the logic of profit, people follow the second principle of ‚ecommony‘: Share what you can.

Now that Uber had been banned in Germany for being anticompetitive, why wait for the next commercial mobile-app-based transportation company? The court’s decision was reasonable, but will not stop technological progress: the days of the traditional taxi are numbered. Why not create an alternative that is truly inspired by the philosophy of sharing instead of profit making? With bikes we do have bikesurf.org, another commons-based network without exchange logic. All you need to do is to register, to choose a bike, check its availability and wait for an email with the numeric code for the combination lock. Then you can pick it up, for example, at Berlin Hauptbahnhof, find it with the help of a map, unlock it, use it, and bring it back and lock it again afterwards. You do not need to pay, but yes, the project does need money, it does need donations. Again, commons are not ‚freebies‘, they are based on an attitude of contributing.

If you need a cargo bike, try velogistics.net. On a map of middle Europe you can choose in your location from different types of load-carrying bikes – this time directly from private to private and according to a variety of conditions: While some offer theirs for free, others ask for donations, some charge a small amount like 2 Euros a day. You can also borrow a sophisticated Mercedes-like model for fifty Euros a day – well, this might be considered as a traditional example of exchange logic. The fact that most projects do not consider themselves consciously as an expression of a new economy often blurs the dividing between new/old market strategies and a commonsbased and commons-creating ‚ecommony‘.

The Freedom to Remake Our Cities and Ourselves

Let us return to the term ScarCity. It is getting worse: Scarcities are also damaging our souls. They reduce our possibilities for interpersonal relationship and for active self-fulfillment. Beyond employment on the one hand and the aforementioned expensive leisure activities on the other hand, we are deprived of the opportunities for active self-fulfillment.

In addition, they make us unfree. Stefano Bartolini (2010) points out that the sense of possibility of people today is often confined to acquisition, profit and competition. He calls this one of the bitterest disappointments created by economic opulence, because such opulence promised a substantial increase in individual and social possibilities.

Again, the slogan 'Right to the city' by Henri Lefebvre (1968) fits into this. Wikipedia – itself nothing else but a result of commons-creating peer-production – renders David Harvey's definition:

*“The right to the city is far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city. It is, moreover, a common rather than an individual right since this transformation inevitably depends upon the exercise of a collective power to reshape the processes of urbanization. The freedom to make and remake our cities and ourselves is, I want to argue, one of the most precious yet most neglected of our human rights.”*⁴

Instead of reducing ourselves to the one and only activity which we are supposed to do all our life for earning money, every one of us has the desire for all kinds of activities – even if we are not the best in doing them, even if we are not able to outcompete every one else in this field, and even if there is no economic necessity to do it.

This corresponds to the third principle of commons creation: „Contributing instead of Exchanging“. While it stimulates economic growth to buy new products there are people who do not only consider repairing the old ones as a necessity from a degrowth perspective, that is for environmental reasons, but who simply

love to tinker with broken radios or bikes. Such kind of people help others in so-called 'repair-café's or in bicycle repair workshops. And yet others love to give introductions into the new exciting world of 3D-printing. Even people who make their living off it are trying to pursue the principle of contributing without exchange logic. In an interview with a nature path from the aforementioned Friedelpraxis, she not only argued that she wanted to provide natural medical treatment to everyone who needs it, but also to be able to work without the pressure of always having to pretend to be the best person doing it.

Towards a world of collaborative commons

Last year, Jeremy Rifkin (2014) published a book called The Zero Marginal Cost Society. The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism, where he envisions not less than a new economic paradigm rising, one beyond scarcity generating institutions, characterised by decentral peer production. As the driving force for this development he sees paradoxically the capitalist force to strive for greater productivity: „The race continues to pick up momentum until it approaches the finish line, where the optimum efficiency is reached and productivity peaks. That finish line is where the marginal cost of producing each additional unit is nearly zero. When that finish line is crossed, goods and services become nearly free, profits dry up, the exchange of property in markets shuts down, and the capitalist system dies” (Rifkin 2014: 60). On the one hand, this becomes

possible by a transformation of communication, energy and logistics into the intelligent infrastructure called the 'internet of things', providing „the cognitive nervous system and physical means to integrate all of humanity in an interconnected global Commons that extends across the entirety of society” (Rifkin 2014: 178).

But on the other hand, again, this is a process where people matter. This new interconnected global commons might enable structural communality instead of structural hate (that is a society where we have to compete with each other), but it also builds upon the commoning practices by people.

A.
Leila Leihladden, Berlin
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4
https://en.wikipedia.org/wiki/Right_to_the_city
(18/09/15).

B.
Die Friedelpraxis, Berlin
Source: Linda Dreisen under
Creative Commons License
(CC BY-NC-SA 2.0)

C.
Das Allmendekontor auf dem Tempelhofer Feld, Berlin
Source: Linda Dreisen under
Creative Commons License
(CC BY-NC-SA 2.0)



A.



B.



C.

For example, crowdsourcing enables decentralised production where ‘prosumers’ learn from one another – and the protagonists of this process are mostly dedicated to the concept of open source.

„The revolution is well under way“, a slogan of a fablab in Milano, is typical for the enthusiasm expressed by activists being involved in the various prospects related to the web 2.0 and smart data with enormous potential for a truly democratic society.

Rifkin concedes the necessity to dismantle monopolies which impede the self-organisation of ‚smart people‘ for the purpose of profit making – the given difficulty to compete with Uber, having Google and the infrastructure it can provide as one of its investors, is just one example. For the same reason, Evgeny Morozov, internationally known as an expert on new media, stresses the downside of big data.

Currently he sees two problematic developments (Morozov 2015). First, social engineering by companies: a non-transparent, covert manipulation of our available options. Second, so-called ‚well-intended nudges‘ by the state in order to make people behave according to their supposed own benefit. But he also criticises the debate about big data as mainly revolving around the necessity of protecting private data against state interference or commercial data collection. He argues that this relates to the past but not to the future, not being helpful in order to create good conditions for the emergence of a new, future-oriented identity that is independent of the numerous restrictions imposed by the state and large companies – but one „to allow all of us to be what we can be“ (2015: 3; translation: FH).

Once services that we are now dependent on (from search engines to social networks) are disconnected from the advertising-dependent business model, the need for extensive monitoring would disappear, and we could have any advanced features that we want from demand-driven transport services to highly personalized searches without the extreme transparency of today.

Our societies will not keep a transportation system where buses go empty because they stuck to a fixed timetable (Morozov writes: „we will not return to“ (2015: 7) – but intelligent transportation systems are not yet the reality in Berlin-Brandenburg!); keeping it would mean wasting energy, polluting the environment and clogging streets – and I want to add: also wasting the life-time of the people who drive the buses.

The network dimensions of commoning practices set in motion dynamics which, according to the media economist Felix Stalder, Zurich, are so severe that they change the way our societies organize, towards a free exchange without regard to traditional forms of property and without bureaucracy (Stalder 2013). Just like Harvey in the quote cited above speaks of changing ourselves by changing our cities, Stalder sees the basic experience of being connected to each other changing our subjectivities. According to him, the structural experience of solidarity goes beyond the liberal understanding of the autonomous individual by learning that one’s own aims and desires can only be achieved through and together with others. While not all forms of cooperation would necessarily serve the common good, he sees solidarity as a daily experience being far more than just an empty phrase, becoming the key element of any (political) project. Sharing without expecting a direct return but under the assumption that this way the resources of the network expand and that this will benefit oneself was not an altruistic act but neither limited to the individual utility maximization. This way, what he calls „digital solidarity“, opens up new horizons and serves as a basis for new cultural, political and economic forms.

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Asking the Wrong Question: Smart Cities in Contemporary Urban India¹

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1. This Paper is an edited transcript of Gautam Bhan's symposium lecture.

The good thing about going last is that everything smart has already been said and I don't have to add to any of it. So let me take this opportunity to do something else. Since we are among a community of friends as well as scholars, let me be a little provocative and challenge some of the conversations we've been having for the last couple of days. I want to do that partly by putting myself in a particular place. I think one of the things that we said today - and it is very important not just for smart cities but for any discussion about urban theory and cities - is to refuse the ability of ideas to travel placelessly, to travel without adjectives, to travel as what Timothy Mitchell once called "principles true in every country." Because they're not. Place matters. Where you ask the question of the smart city matters. So I'm going to ask it from a particular place. I'm going to ask it from the Indian city. This is not the city yet to come that Ayona Datta talked about earlier - this is the city that's already here. From the heart of the Indian Megacity, the city of a kind that Jennifer Robinson once called "big but not powerful." So what does it mean to ask the smart city question from the Indian megacity? I have to tell you something about Indians. Indians love exams. We love them. We love taking them. We take them all our lives. We love them because exams are finite objects. You look at them and say "Here is a clear problem. I want to crack it." It is like cracking a code. We know how to crack an exam.

The Civil Service Exam, Engineering Entrance Exam, Architecture Entrance Exam, School Leaving Exam, Collage Leaving Exam, Collage Surviving Exam. What we are scared of is not an exam but an open question. An essay. It terrifies us. Give me an exam and I will crack it. Every time there is an exam in India, there is something called a "kundli". A kundli is a photocopied book that is an answer guide to an exam. It has test questions that are basically just about the cousin of the likely questions on the exam. So the minute there is a new exam we have a new kundli. It's out in five minutes. No single, recognizable person or company produces it. No one controls it. There is no technological tracking of its production, but it's on every street corner within half an hour of a new exam being announced. It's very smart. It's very efficient. It's very quick.

The thing about kundlis, the thing about this way of cracking exams, is that this is also how we have built our cities. We live in our cities and we crack them everyday. We crack broken systems, we crack fragmented governance, we find solutions very quickly that in urban theory are called informal, ephemeral, temporary. They're not. I picked this picture for a very particular reason.

>>Figure A: Paan Vendor, Charkop, Mumbai.

This street side vending shop - the picture definitional of something informal - is literally solid enough to be built into concrete. It's not ephemeral. It's not shaky. This woman has sat at that same spot, I can tell you, every day for years. It's not just one instance or one sidewalk. This is the way in which a city is built. See Figure Two.

>>Figure B: Behrampada, Bandra East, Mumbai.

Just pay attention to that building on the right. When you teach this in Chapter One of the textbook on urban theory, you teach it as everything that is wrong. It's the unplanned, the chaotic. It's what doesn't make sense. This is the problem that smart city tries to diagnose and fix. Yet inside that building it looks like this.

>>Figure C: Section through Behrampada, Bandra East, Mumbai.

It's five floors. There's an owners house, a workers dorm, an embroidery unit, community space, a praying hall, a library, a grocery shop. Layer upon layer upon layer of use. They cracked it. When one theorizes from this, you can make it sound fancy. Teresa Caldeira and James Holston — who is in the audience — would say: "Cities of certain kinds are auto-constructed". What does that word mean? What does auto-construction mean? They define it. They tell us that many parts of the world are not built through the intentions of "us", of planners, architects or designers. They are built through what they call "transversal logics". Transversal logics with official regimes of property, of law, of planning, of land, of ownership. They're built very smartly. Now what's interesting about it is: you can talk about the idea of a smart city, a city that can be read, or prompted, or quantified, or mapped, or GPS-ed, or GIS-ed but when you put that question inside the auto-constructed city, none of it remains standing. Auto-constructed cities, like the city which I grew up in, undid modernist planning. They undid world class planning. They will undo smart cities.

This is why I don't worry about smart cities. Very few people I know in India worry about smart cities. What they say is that the new exam is the smart city. How should we crack it? How much should we play? Should we mimic? Let's be smart! Let's count! You go to

that meeting and give the data. Let's be strategic! Let's reject it! Let's break the sensor! So when we ask: what alternative imaginations of smart cities should we come up with? I don't think we should come up with anything. We're not the right people to answer this question. What we should be doing is listening to the way that people who build auto-constructed cities are cracking this code. What's the new game? What's the new play? What's the new transversal logic? What are the new vulnerabilities and possibilities that are coming up?

I've been so struck over the last two days about a sense of nervous anxiety among my European colleges when they talk about technology. Surveillance, privacy, closeness, the coming of the state. There are so many anxieties. Everyone I talk to in India is incredibly excited about technology. They want to play with it. They know it can surveil them but they also now they can crack that surveillance. We know how to hide. This state has been looking for us for ever. [As an aside, we also know that when the state wants to find you, it will pull out a paper journal from the fourth floor of the drawer of a public office and find where you are. It doesn't need any technology to exercise that kind of surveillance or that kind of violence]. What this moment needs is for us to listen to these new ways of building cities and see if one of the answers we get is technology. If so, then we have to challenge our critiques of smart cities, because perhaps technology will be the new way in which auto-constructed cities will build themselves. That was my deep discomfort with Adam's (Adam Greenfield, the editors) Keynote Talk yesterday. When he spoke about whether you should introduce 3D-printed materials in a slum in Chennai and argued that we shouldn't because a new technology will break this almost primordial psychic relationship between people and the materials they have traditionally used. Why should we fear this? Why not instead believe that people can decide whether a new technology is better than the tarp they have used so far? They will crack it. They will decide whether to use it to build houses, or to reconfigure it, sell it, transform it in ways we cannot even imagine. They will undo this new technology rather than the other way around. Your technology will not undo them, because citizens of cities of the south know how to crack codes.

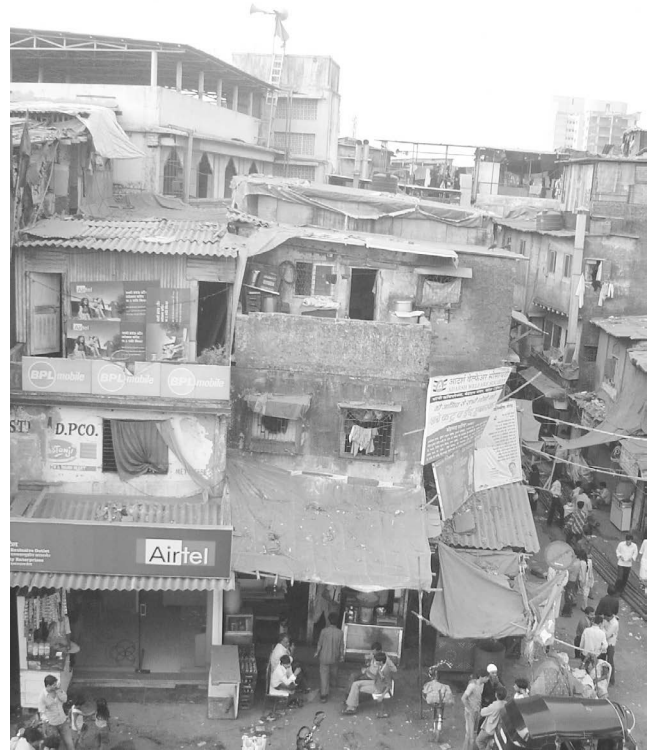
A.
Paan Vendor, Charkop, Mumbai
Source: Prasad Shetty

B.
Behrampada, Bandra East, Mumbai
Source: Prasad Shetty

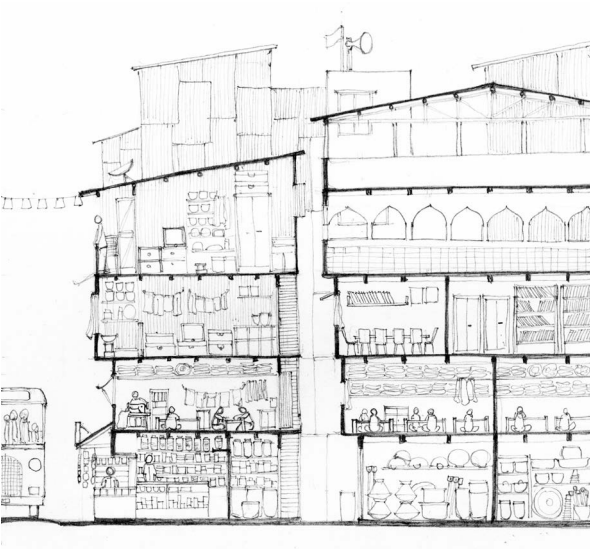
C.
Section through Behrampada, Bandra East, Mumbai
Source: Prasad Shetty



A.



B.



C.

They are not hackers of algorithms— they are hackers of urban cities. When we fear change, we must think of our own uncertainties as planners, architects, designers and policy makers and check our own arrogance about our impact.

But now I want to disagree with myself because this story is too easy. It's too quick. It's too nice to say here is *jugaad*, the Hindi word that denotes making something out of nothing. We will cope. Informality is not marginality, it is entrepreneurial heroism. The thing is: while it is wrong to dismiss informality as a site only of squalor in a "planet of slums," it is equally insulting and patronizing to mis-recognize the vulnerability of the slum. It is not fair to expect a community that is resilient to keep self-providing trunk infrastructure just because it can cope. It is not fair to expect infrastructure to be provided precisely by those who are most vulnerable and most excluded from it. So while we celebrate the agency of the slum, we can not absolve ourselves of the responsibility of its missing infrastructure. Which is why in this panel I want to challenge the idea of the commons against an older idea of the public. A public that - following scholars like Edgar Pieterse who is in the African Centre for Cities in Cape Town - can not be so easily pulled apart from the state. That same developmental state that was meant to provide what the self-provisioned commoning and community practices seek to now make up for.

I am a big fan of commoning and community practices. But I live in a city where 17% of the city is covered by drainage pipes. To speak of commoning where collective infrastructures exist is very different to speak of commoning in cities where collective infrastructure does not. Because to communally build a sewer pipe is possible but the cost of building that is a cost that falls upon precisely the most vulnerable of urban residents. In some way then, the discussion of the smart city — as well as its critique — has to go back to a paradigm that we also critiqued as academics: modernist planning. We know how to kill this idea. Yet David Harvey warned us - since we're doing Harvey quotes in this session - to "constantly resist the endless pleasure of the damming critique". He is right. Because in some sense the challenge to us is to say like Anant Maringanti said from the Hyderabad Urban Lab: "How do you plan in places where planning is both broken and essential?"

How do you deal with urbanism in places where the state is both inadequate and indispensable?" So the challenge that smart city provokes for me is not a challenge of our technology or data. It is a challenge to say: What role can this technology or data play in going back to the original questions of providing a set of core public goods and infrastructures? What I want to do is to challenge our idea of planning itself. To say: the death of modernist planning can not be replaced by paradigms that do not know how to build the sewage pipes under the city's floor. In closing, let me suggest three different kinds of re-imagination of planners who practice what Solomon Benjamin once described as "occupancy urbanism"— the building of the city not through the logics of intention but through micro-practices of everyday incremental occupation. For Benjamin, occupancy urbanism is done by people who build slums as the auto-constructed the city. The question I am asking is different: Why can't planners be occupancy urbanists? Why can't planning be a site of critical, radical, incremental politics? Why can't we imagine planning losing the shadow of modernist planning but not going all the way to the imagination of the smart city? We can then think of planning in new ways: of a boundary condition, of a mechanism to protect the public, to block concentrations of value and resources.

Can we imagine smart planning as a radical, political exercise that protects the public? I pick up the example of planning particularly to suggest that it is too easy for us to concede the duty and obligation of resistance only to subvert urban residents. It is too easy for us to set aside top-down practices —including master planning — as necessarily oppressive and tools of state violence. Planning is all of these things but it can also be a whole set of other things. To me a way to re-imagine what planning is will be an imagination of smart planning. Not because it's clear or efficient, or that it realizes itself on the ground, but precisely because it recognizes itself as only one actor in a game where multiple people are building cities of multiple logics. It seeks to enter into this game, to play its part, to push it in one direction or the other. This is a re-imagination that the notion of smartness pushes in me, and it is a provocation that I would like to leave you with.

Thank you!

A.
**Day 2 - Discussion Panel 3,
at TU Berlin**

B.
**Ola Söderström in the
discussion of Panel 3**

C.
**Ayona Datta in the
discussion of Panel 3**



A.

(...) Listening to you, Gautam, I was thinking about Singapore because I just spent time there a few years ago. And about this extraordinary story of how a city was disciplined through this extremely hard hand of the state (...). You were kind of switching between this Indian capacity to crack cities (...), to say what is the capacity of all the cities in the global south. I was wondering how far this is true, having Singapore in mind, and how this city is extremely disciplined and even though you framed it as „Indian,, it is an european critique towards the Smart City. How far does that reach? What is the geography of your argument?

B.

(...) I am just thinking about the planning issue as a very important issue. Listening to your talk I agreed with most of it. I was just wondering is it the death of modernist planning, or do we actually seeing a resurgence of modernist planning in the Smart City? A Much more potent and avaricious kind of form of modernist planning armed with technology. Because some of the planners I have been talking to who are designing these cities - and again I am speaking from that perspective of the new cities - are really thinking about planning in a very modernist way. The planning in which slums have no roles, the kinds of digital assemblages which Colin is talking about will really have no role in that. And they see that modernist planning equipped with technology of GIS and survey technologies, mapping everything onto that and so actually the technology ist giving them more power of autocratic planning. So where can that code get cracked? In part you tried giving some examples of where is that code being cracked in these actual practices of Smart City making? In slums and all of that of course they are doing it in a very informal way but not necessarily linking that to actually cracking a Smart City proposal or redevelopment. Perhaps you can give some examples.

C.

A.
Voice from the audience

B.
**Day2 - Discussion final
round, at TU Berlin**

„I was thinking that there was a slippage during the two days between smart city and smart metering. But I think there is quite an important difference in that the smart city - besides from its corporate logo, which I think is the least interesting - as it gets developed in engineering schools has within it at its core a sense of totality. It is a totalizing project. It is smart city, and it is an integrative, totalizing project. Whereas a smart meter isn't necessarily. It could be just a single meter, or metering project. And I think we need to think more about the question of totalization, totality and of course modernism, of which we spoke towards the end of today. One aspect of course about modernism is its totalization. The question is not that plans and master plans are not necessary, planning is necessary. One question is how to subvert their totalization. And to develop master plans that carry within them a subversion. And that would be a plan that questions itself as a plan or presents itself as a different kind of plan.“

A.



B.

REFLECTIONS ON THE “BEWARE OF SMART PEOPLE!” SYMPOSIUM

Two new paradigmatic terms have entered the debate on cities simultaneously – the “commons” and the “Smart City”. While, at a first glance, those two seem to be in opposition, they could also be conceived as concordant. The symposium’s general aim was to critically reflect possible relations and intersections. We were particularly interested in discussing the potential of the city as a place and space that is inclusive, shared, and negotiated. And we aimed at discussing city inhabitants as *active producers* of and *contributors* to Smart Cities rather than as “users” or ‘consumers’ of smart infrastructures that are being implemented by policy or corporate actors in the framework of technocratic Smart City models. Although we put people at center stage we do not postulate that everything people do in urban contexts is “good” as such.

It was inspiring to hear that Smart Cities are being discussed in many different disciplines. There was a kind of consensus among conference participants that the concept of the Smart City refers to a general idea of introducing new technologies into urban development that up till now has rarely been operationalized or implemented in a whole city. We also learned about some other, broader, less technocentric definitions, interpretations and foci, which for example use the term “smartness” and stress sociopolitical innovations and smart governance. At the same time, the concept and term Smart City has been pushed heavily by major global players and is being subsidized by e.g. the EU, as well as some national and local governments etc. In consequence, it remains part of a professional agenda reluctant to integrate voices from civil society.

Notions of the term “urban commons” seemed less diverse regarding definition. There was some positive consensus that commons are about social relations, empowerment and common possession and maintenance of resources. And, in contrast to the Smart City concept, a considerable amount of experience and knowledge gained can be found in different contexts and parts of the world in forms of self-provisioning and auto-construction - partly in conflict with existing power, partly in coordination. In consequence, commoning can be described as a “performed practice” that refers to a large variety of livelihood safeguarding measures that can be defined as “smart”.

But the term and practice of commoning is also contested in terms of equal accessibility and publicness of space and resources. Nevertheless we are still curious to learn how commoning contributes to new and better practices of participation and collaboration. Reflecting on statements and discussions in the symposium, one can conclude: a number of people are already out there who use new technologies for their objectives, new forms of sharing, with less hierarchies but also claiming spaces and resources for a defined social group and beyond, maintaining them as common goods. In her essay, Friederike Habermann gives multiple examples of commonly organized, but openly accessible projects of resource sharing, like the web-based platform foodsharing.de.

The need for inter- and transdisciplinary discourses and activities

If one tries to relate those two discourses, the discrepancies of scale become obvious: the capitalized and entrepreneurial Smart City on the one side and the small-scale “performed practice” of urban commoning on the other. The symposium showcased an enormous number and variety of perspectives, topics, questions, problems and solutions. The large and diverse audience did not always allow for a redefinition of overarching concepts, instead it required dedicating a considerable part of the symposium to engage with specific case studies and different forms of local knowledge to explain individual perspectives, approaches and problem definitions. We feel that we succeeded in offering a platform for an inter- and trans-disciplinary discourse with academics from many disciplines, with practitioners, a wider public and activists from different parts of the world.

To make the two discourses productive, we want to develop our reflection on the basis of Colin MacFarlane’s reframing of the term “smart urbanism”. MacFarlane emphasizes the importance of place, politics and people for the use of smart technology by city dwellers. In his examples of slum dweller initiatives to source and handle their own data in order to advocate empowerment or build partnerships with the state, he values political agenda over technology. The Social Justice Coalition in Cape Town uses sourced data to advocate for the improvement of sanitary conditions and budgeting in the townships. The visualization of data is used to fight a political battle for a better livelihood, and not for the implementation of an industrial product in the first place. This perspective goes beyond the often-proclaimed antagonism of technological versus people’s smartness, which we consider productive also for the global North. A first account of this approach and its possible impacts is given in Saskia Sassen’s report on the gains of digital tools for low-income workers in the US in session 1.

Inclusive urban development needs agency. We should not address it as a black or white issue, but take a look at the details in theory and in practice: research should analyze the effects of new technologies in many different aspects – without sticking too closely to the term “Smart City” and without limiting it to the ICT or communication sector. Similarly, research should investigate the effects of practices of commoning while asking what the “common” actually is or could be in each, site, case and scale. This should include relating both concepts to urban physical space as well as to questions of governance and power relations. This might also help overcome the one-sidedness when discussing Smart City and urban commons (“Smart City is good/bad”, “urban commons are good/bad”). In any case, we need to have in mind that both concepts are contested and can be interpreted as either inclusive or exclusive.

Inter- and trans-disciplinary research in both contexts might help towards an understanding of how people (individuals, groups, institutions, stakeholders) deal with urban resources and local knowledge production as common goods and under which conditions smart technologies and practices of urban commoning support an inclusive urbanism, which then could be framed as “smarter urbanism”. ICT technology has to be considered as a tool and as such has to be questioned in terms of the means by which it is applied, by whom and for whose profit. We are positive that the insights we gained during the symposium and which we now share with this proceedings publication will inspire researchers and practitioners to critically and productively contribute to the future of the urban, shared and co-produced as a common good.

The symposium is organized by

TU Dialogue Platform

Smart People & Urban Commoning

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Chair for Urban Design & Urbanization

Jörg Stollmann is Professor for Urban Design and Urbanization at the Technische Universität Berlin. His work focuses on cooperative design strategies and socially and environmentally sustainable urban design. Among the chair's research projects in the field of education and urban development are the Akademie einer neuen Gropiusstadt and Soko Klima – Stadt gestalten mit Plan. With Rainer Hehl, Jörg Stollmann was curator of the section Squat. The Informal City under Construction at the IABR 2009 and founded urbaninform.net. From 2002 to 2008, he was principal of INSTANT Architects with Dirk Hebel. He taught at the ETH Zurich in the MAS Landscape Architecture program and directed the MAS Urban Design program. Jörg Stollmann graduated as an architect from the Universität der Künste Berlin and Princeton University. He was a fellow of the German Academy in Rome and the Van Alen Institute New York.

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environment and future urban design. Therein he is especially interested in the role of technology as catalysts of change and its role in urban transformation; as well as discussions on social, environmental, economical and political consequences and opportunities arising from digitalization, and the role of urban design communication within this discourse.

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Philipp Misselwitz

Habitat Unit - Chair for International Urbanism and Design

Philipp Misselwitz is an architect and urban planner based in Berlin. He was educated at Cambridge University and the Architectural Association London. In 2013, he was appointed Chair of Habitat Unit – International Urbanism and Design at the Department of Architecture, at Technische Universität Berlin. Research and practice relate to his interests in use-driven planning, informal urbanization, and new models of urban governance. He works as a consultant to national and international development agencies including German Development Cooperation (GIZ), Cities Alliance and United Nations. Themes for consultancy and policy advisory include refugee camp urbanisation and urban refugee protection, as well as the Habitat III/ New Urban Agenda process. He was curator of international exhibitions such as “Grenzgeografien”, “Liminal Spaces”, “Refuge”, “Space Time Dignity Rights”, “Gwangju Folly II”. He is a network partner at the Berlin based urban development consultancy Urban Catalyst Studio.

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Johanna Schlaack is head of the department Urban Development at SPI Foundation and Associate at the Center for Metropolitan Studies, Technische Universität Berlin. She studied Architecture in Germany and the UK and holds a PhD in urban planning from TU Berlin. Her research focuses on sustainable urban development, Smart Cities, participation and bottom-up urbanism as well as infrastructures, airports and integrated urban design in international context. Johanna Schlaack is co-founder of the think tank “Think Ber!n” and the urban consultancy “PS. Planen und Stadt” as well as board member in the “Association of Architects and Engineers Berlin” and in the scientific advisory board of the “Hermann-Henselmann-Foundation”.

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Konrad Wolf is working in Berlin as a designer and researcher in the field of architecture and critical theory. He was student assistant at the Visual Culture Unit of Peter Mörtenböck (Vienna) and co-editor of the magazine MALMOE. Konrad Wolf holds a masters degree in critical studies from the Academy of Fine Arts Vienna and is currently completing his masters studies in architecture at the TU Berlin.

The Lecturers

Gautam Bhan

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Gautam Bhan teaches, researchers and writes on urban poverty and inequality at the Indian Institute for Human Settlements, Bangalore. His work as an academic and activist ranges from displacement and resettlement of the urban poor to gay rights advocacy. Co-author of *Because I have a Voice: Queer Politics in India*, Gautam Bhan contributes to re-conceptualizing smart people and their spatial, medial and political practices.

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Ayona Datta is Senior Lecturer in Citizenship and Belonging in the University of Leeds. Her research and writing uses approaches from sociology, anthropology, feminist and critical geography and broadly focuses on the gendered politics of citizenship and urbanization across the global north and south. Her most recent research on smart cities and social justice in India and South Africa has led to the publication of number of articles in peer reviewed journals and popular media. Ayona is co-editor of *Translocal Geographies: Spaces, places, connections* in 2011 and author of *The Illegal City: Space, law and gender in a Delhi squatter settlement* in 2012 published by Ashgate. Her forthcoming co-edited books *Fast Cities: Mega-urbanization in the global South* by Routledge and *Ecological Citizenships in the global South* by Zed Books will be published in 2016. She is author of over thirty articles in peer reviewed journals as well as two films *City bypassed* and *City forgotten*.

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Jörg Stollmann, Konrad Wolf, Andreas Brück,
Sybille Frank, Angela Million, Philipp Misselwitz,
Johanna Schlaack, Carolin Schröder (eds.)

BEWARE OF SMART PEOPLE

Redefining the Smart City Paradigm towards Inclusive Urbanism

TU DIALOGUE PLATFORM SMART PEOPLE & URBAN COMMONING

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In cooperation with the festival „MakeCity –
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In coordination with the scientific workshop
„Smartology as new urban utopia“ organized by
Martina Löw, Gunter Weidenhaus and Martin Fuller,
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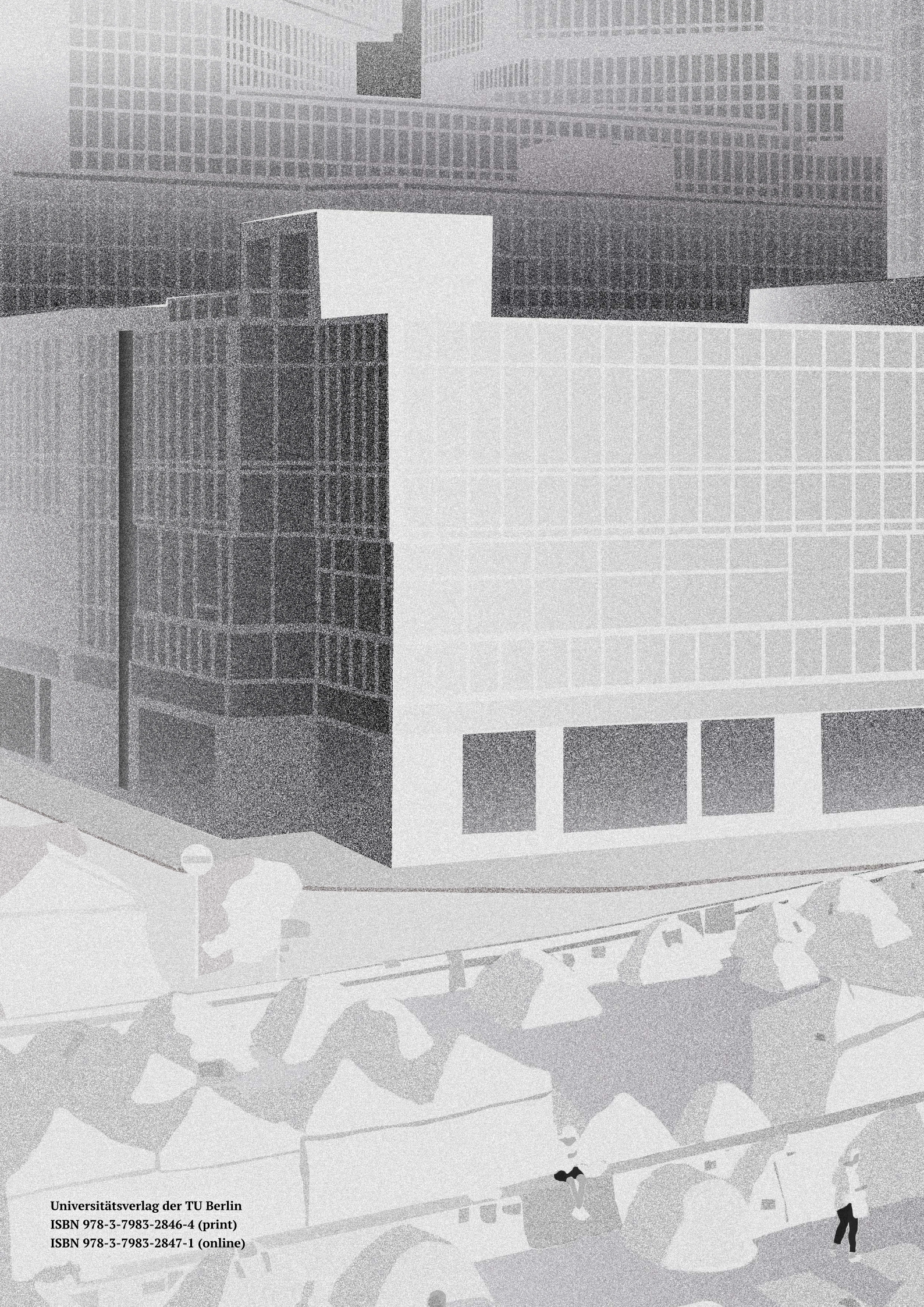
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