Chapter 1
Manifesto for Collaborative Urbanism

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Abstract This chapter will consider some key factors affecting cities at the global scale, before addressing the forces at play in the contemporary 'given-city' This will provide a platform to review the emergence of the 'Smart-City' and consider how a radical approach to data may be required in order to enable a collaborative culture of citizen engagement to emerge.

1.1 Introduction

The European refugee crisis resulting from the war in Syria, the terrorist attacks on Paris, and the focus on the critical negotiations in COP 21 remind us that we live in a highly globalized world. The fact that the Paris Agreement took 21 years to achieve consensus, that this agreement is aspirational rather than binding, and relates to emissions and not to production of fossil fuels, indicates the relative weakness of the institution of national governments in tackling complex global challenges. However under the umbrella of national government, cities are also highly globalized and operate as relatively free agents to leverage their competitive edge in the external market place. While housing a majority of the world's population and thus contributing to global environmental problems, cities have been able to keep a low profile in terms of their specific environmental footprints, and thus evade collective political responsibility. There is little doubt nevertheless that cities will have to provide the innovation and solutions for the future.

The original version of this chapter was revised: The affiliation of the author Dick Gleeson was corrected. The erratum to this chapter is available at DOI 10.1007/978-3-319-47904-0_13

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C. Certomà et al. (eds.), *Citizen Empowerment and Innovation in the Data-Rich City*, Springer Tracts in Civil Engineering,
DOI 10.1007/978-3-319-47904-0_1

While millions of citizens will have watched the media reports on COP 21, and perhaps felt themselves aligned with the NGOs and frustrated protestor groups lining the streets, they will also have felt largely detached from the governance and institutional processes that frame both national and city response to global crises. This sense of powerlessness and a perception that it is difficult to intervene and make a difference is perhaps nothing new when considering urban governance or the making of the city. Within this traditional frustration of feeling powerless, the widespread availability of the Internet suddenly opens the opportunity for ordinary citizens to connect with city institutions. As a result individual citizens have never been more connected and can interact through multiple personal devices that are increasingly more networked. The availability of web 2.0 enables open-source collaboration. These resources would suggest that the technology exists to build a new platform for a much more dynamic and active form of citizen participation. While there are interesting and inspiring examples happening in many cities, crowd-sourcing being one significant area, a culture of Internet inspired citizen participation has not entered the mainstream.

The reasons for this continuing disengagement with urban development are multiple. Firstly it is inherently difficult for the individual citizen to make sense of the contemporary city, with its complex weave of pattern, scale, function, and apparent disorder. Furthermore the city authorities have over time learned how to control the processes of city management and urban plan-making, work with a small number of 'trusted partners', and fear the opening up of the process will lead to paralysis and loss of control. There is also the difficult question of data and its relationship to the citizen, and how data is interpreted to produce knowledge, which feeds into decision-making and policy.

Whilst modern city planning rests on an evidence base which is derived from data, analytics and research; the reality is that the citizen is generally disconnected from the production of an evidence base through the lack of skill sets necessary to commission research and manipulate raw data. This fundamentally undermines any serious attempt to champion citizen engagement. The availability of technology alone however may not be sufficient to generate a culture of collaborative urbanism. Turning urban processes into ones which are people centric will require a fundamental re-positioning of relationships where the citizen can relate constructively to the scale of the planet, to the scale of the city and to the scale of the neighbourhood in order to understand the interaction and impact of economic, social and environmental dimensions operating at different scales.

The present book analyses the current transformation of the data-rich cities through inter- and trans-disciplinary experts' contributions, with particular attention paid to innovative people-centred solutions in urban planning and management. The purpose is to explore a new perspective on the actual possibility for technological innovations in urban infrastructure and functioning processes to effectively involve ordinary citizens in collective knowledge-production and decision-making processes. The included chapters explore ways to complement technical and procedural improvements of urban efficiency with an engagement towards social cohesion and cultural dialogue, green regeneration and

inclusiveness (including removing obstacles to participation). The rationale for intuitive and attractive user interfaces is thus reinterpreted to integrate smart systems into citizens' lives in a meaningful and easily accessible way. It builds upon the consideration that cities are multi-layered entities where a "physical layer" (i.e. urban infrastructures), a "meta layer" (i.e. the data layer in the on-line world) and a "control layer" (i.e. the real or virtual places where people make sense of data) are networked. Authors' contributions suggest that the alignment of these layers can be reworked in order to produce a collaborative form of urban planning, governance and management. Evidence-based and grounded-in-theory approaches not always converge, thus failing to provide researchers and practitioners with an adequate understanding of how to exploit opportunities from a data rich urban environment. To this end, innovative strategies are investigated through cases and examples in order to explore the mutable, multi-scalar and complex character of participatory processes (out of the formalism of traditional approaches) in both design, production and application of smart solutions. These can narrow the gap between research results and policy applications by bringing heterogeneous social actors to work together.

The following pages serve as an introduction to the book and, at the same time, advance the proposal of a Manifesto for Data-rich Cities. These exploit Internet capacity, and respond to citizens need to connect, communicate, collaborate, change and control by acknowledging and factoring this capacity into city governance, policy, and operational life. Moreover, this requires to review the emergence of the 'Smart-City' and consider how a radical approach to data may be required in order to enable a collaborative culture of citizen engagement to emerge.

1.2 Global Challenges

The historic distribution of the population across the great expanse of the globe tended to create an impression that the Earth was endlessly resilient. We now know this is not the case. The sheer impact of the numbers alone, 7 billion, with the demand for food, shelter and raw materials, combined with waste production from the daily process of living, is now stressing the planet's capacity to absorb such pressure. Our dependence on carbon and fossil fuels is linked directly to climate change, melting ice-caps and rising sea-levels. Climate change impact is felt in different ways, increases in inland temperature is drawing new population to coastal areas, for example along the east coast of Africa and along the coast of California, water scarcity is generating conflict at a regional scale and contributing to political instability, and population pressure on ecologically vulnerable regions has resulted in 20 % of the Earth's surface being described as degraded. The term Anthropocene has been used to denote a new geological era on Earth, equal in scale to past geological eras, except that in this instance it is caused by the impact of 7 billion people living on the planet, the majority of which now live in urban areas.

Levels of population increase, combined with the rate of urbanization and the upsurge in the scale of individual cities, means that cities are firmly in the dock in relation to the environmental crisis at the global scale. National governments tend to be the major players politically in the search for solutions, but have proven themselves weak in building a consensus towards effective and binding agreements. National governments however are happy to delegate significant freedom to cities to manage their challenges, seek out competitive edge, and develop their profile internationally. Many cities quickly realize that in tackling the complex challenge of sustainability, the global environmental focus quickly extends to include global economic and social dimensions. Cities operate within the framework of a global economy, with its cycles of high energy, decline and unpredictability.

The evolution of the global economy over recent decades has expanded the number and scale of cities that have managed to create the competitive platforms necessary to compete internationally. In those cities where a global economy has anchored itself, a range of supportive infrastructure combines with a skilled and highly paid workforce to create class and wealth distinctions, exaggerate local disadvantage and poverty, and contribute to political tensions. The global economic recession from 2006 onward has deepened these structural faults across the city landscape with property values collapsing, a severe contraction in investment caused by a banking crisis, and city budgets unable to sustain service provision. What we are seeing in a range of global context is a deep-seated malign convergence of environmental, economic and social crises, leading to various levels of street protest and citizen anger.

The reasons for these problems exist at both the international and global scale and critically at the scale of the city. In terms of citizen perception however, the specific city context becomes the point of frustration and attack, the global forces too elusive, remote and non-tangible. A major challenge therefore is to forge collective citizen perspectives, which can begin to impact on the practice of large corporations, global economic networks and cities. Such citizen perspectives are likely to be strongly informed by value systems and a consensus on human need. In practice this means organizing the objective component of cities in the form of physical and institutional infrastructures to support the subjective qualities and value systems of citizens and communities. Furthermore, we are beginning to see how environmental performance is impacting on the reputation of companies in the market-place and prompting the adoption of more sustainable strategies. This responsiveness and sensitivity of the market-place to demands from citizens is likely to grow, with an increasing appetite from consumers for information on food provenance and the impact of food on health.

The city or city networks, sitting between the planet scale and the neighbourhood/citizen scale, may have to provide the joint platforms to solve problems at both the global and the city-scale. Harnessing the energy of citizens and creating an awareness of the inter-connectedness of fundamentally different scales is challenging. It may be more fruitful to work with citizens at the scale of the city, to find urban models that are more sustainable, while building more awareness and a

sense of responsibility towards the scale of the planet. A good starting point is to ponder on the question of who shapes the city, and how they do it.

1.3 The City Dimension

This question of who is allowed to shape cities is not an easy question to answer. A city is not a handbag, or a dining chair, or even a domestic house. It is more like a complex organism, built over time, constantly changing and evolving, the product of multiple hands and designers. In his acclaimed documentary-movie, 'Urbanized' (Hustwit 2011), Gary Hustwit explores a spectrum of challenges in 40 different cities across the globe, drawing in stories from hugely varying contexts and scales. While taking a clear line on what makes cities habitable, the movie comes down firmly on the need for citizen participation, revealing along the way the processes and decisions made by city designers and the impact they have on our day-to-day lives. Hustwit, who spent almost three years on the movie, realized early on that he would almost certainly fail in his 'grand-project', to make sense of cities; the topic was just too broad and complex. What he does achieve is a work of art and a fast-paced compelling documentary; weaving footage from multiple locations with live interviews and a great sound-track from the band Wilco. The central message is that if you don't have a say in how your city is shaped, somebody else will shape it for you.

While there are frequently some good intentions on the part of City Authorities, progress towards meaningful partnership with citizens is slow and is often frustrated by privileged stakeholder and interest groups who pursue narrow goals. Public engagement is often perceived as weak, as it often fails to deliver stated aims. The culture of citizen engagement is frequently hampered by the following;

- By polarization between top-down and bottom-up stakeholder groups.
- By a process which just pays lip-service to requirements for consultation.
- By a process which is quite technical and which is really only legible to specialist groups with the knowledge and skill of how and when to intervene.
- By agencies and regulatory bodies following a core brief, who don't see the need to interface with a wider picture.
- By a lack of any appetite or belief in the value of collaboration.

The City Authority itself of course, also encounters deep challenges in building a collaborative partnership with the citizen. There is often embedded silo thinking within its own ranks. The need to strictly meet legislation and policy requirements also tends to result in rigidity and lack of spontaneity and flexibility. The over-use of external consultants, due to scarce internal resources, breeds a culture of dependency and hands the initiative elsewhere. Authoritarian top-down is seen as less risky in terms of retaining control and ensuring the genii is not let out of the bottle. Communicating the story of the 'big-picture is challenging in a context where local issues are the only game in town politically.

We can see therefore that cities are complex and stubbornly resist simplification. Many disciplines, however, dealing with the urban context feel the need to define a specialist viewpoint, and this can often develop into a silo mentality. A holistic approach therefore, will help to acknowledge complexity, and create awareness and need for systems thinking in order to meet the multiple challenges facing the city. A systems approach to cities will try to create a framework, which can include a consideration of city issues from multiple themes and perspectives. Urbanism is a philosophy that nurtures and celebrates the complexity of cities and the need for a multi-disciplinary approach and awareness. Urbanism also supports the need for collaborative processes and is committed to using and developing new tools and methodologies in tackling issues arising in complex urban contexts.

1.4 The Neighbourhood

Despite an increasingly globalized economy, the Internet, and multiple platforms for communication, specific local place and physical context are still the primary reference for urban dwellers. The local neighbourhood with its familiar physical and social infrastructures is complemented by other city locations, sourced for culture, recreation, retail, or as the destination for a daily job commute. From these various city contexts, citizens build a platform from which they extract a range of services to support a daily life. Increasingly the internet and user-friendly software is changing the manner in which the individual citizen relates to an urban context, firstly in providing a powerful new way to access local services and secondly in terms of communication and the construction of new social networks.

However the neighbourhood has proven to be a very enduring concept and is built around our idea of place. It is usually characterized by a particular street pattern, land-use mix, architectural style, and by the communities that dwell or do business within its spatial area. Most people have a very strong affinity with their own neighbourhood and when probed about city issues, tend to list concerns about their local area, rather than articulate strategic issues. While the scale of the city neighbourhood is well suited to building a culture of engagement, urban governance tends to operate at the larger city scale, and is challenged to harness local citizen energy. Things may be beginning to change however. There is now evidence of a widespread trend of urban interventions being initiated from the scale of the neighbourhood, with or without the support of the formal City Authority. These local neighbourhood projects are often driven by a small number of committed champions, using social media to generate profile, and gaining community support in the imaginative way they respond to perceived gaps in the city infrastructure. A feature of these local initiatives is their tendency to be temporary in nature, to draw in the pro-bono support of artists and local resident professionals, and to colonize vacant, derelict, or under-used property. While there may be some revenue generating activities there is usually a strong community and culture focus with

a programme of events designed to attract local residents. The presence of such innovative energy in the local context can prompt a questioning of the status quo, and generate a sense of new possibility about what can be achieved at the local level. Rather than accept the generic and predictable top-down process of occasional local plan review, bottom-up neighbourhood initiatives can release a surge of creative thinking, generating confidence and a feel-good factor which strengthens local community capital, and creates the capacity and confidence to challenge the top-down city narrative.

If we refer to the city of today as the 'given city' we could argue that the ordinary citizen has had an extremely limited role in its production. Nonetheless the citizen gets on with the challenge of a daily life, mining a personal biography from both the physical context of the 'given city' and the new technology of the Internet. What of the future city? Could we imagine a future in which the citizen could be a co-producer of the city, both its hard infrastructure of building fabric, utilities, and landscape, and its soft infrastructure of facilitating institutions and responsive citizen focused software. In this future city, the citizen would play a central role in shaping the city and in ensuring its weave of infrastructures would respond more directly to human need. Today urban planning and governance remains hugely challenged in building a culture of citizen participation.

Digitization and innovative Internet technologies are providing a new urban context. Can the power of a user-friendly Internet help harness the creative energy of citizens to share in the design and making of more people-centric cities? How can a platform be achieved to facilitate this possibility. To do this we will need to reflect on how the 'given city' has been shaped to date, on the role of the city and various crises that need new direction and an urgent response, and how exemplars in specific locations are prompting new urban models around the theme of people-centric urbanism.

For example in the case of the Dublin City, the years following the economic downturn from 2008 onwards witnessed the emergence of multiple bottom-up initiatives across the neighbourhoods of the inner city of Dublin ranging from neighbourhood social enterprises located in otherwise prohibitively expensive development zones to young professional community start-ups providing work and leisure opportunities (Aliperti et al. 2016).

1.5 Smart City

The discussion so far has revolved around the need to engage citizens and communities in the future decision-making about cities and especially their neighbourhood. In this context, the term Smart City might suggest a capacity and commitment to marshal a collective civic intelligence to tackle city challenges via the presence of so-called Big Data created on the Internet through social media or increasingly by the internet of things. The phenomenon of Big Data is now an inherent component of modern complex cities, an essential element of

infrastructure, underpinning the functionality of city systems across the spectrum of both the public and private sectors. The term ‘data-rich city’ might seem initially to be something wholly desirable, conjuring up a consolidated platform and an image of bountiful supply, and perhaps generating an assumption that this vast resource will be put to good effect.

The critical debate is currently attracting a growing interest in scientific international and interdisciplinary communities that are trying to answer questions such as “do people really need more data to live better in cities? or is data richness compatible with the centrality of people in the urban environment?” In recent years, “smart city” rapidly turned into a buzzword that has been used with reference to almost any technology-driven urban initiative, encompassing a broad range of urban life aspects (e.g. quality and welfare, sustainability, social cohesion, economic growth, etc.). This makes the concept itself ambiguous and difficult to be operationalized. Moreover the interest for the technical improvement of city infrastructure and technological application of data-driven solutions, often disregards the evidence that although these are important, they are not endpoints in themselves. This book provides some critiques and speculation on this theoretical perspective as well as practical implications that emerge from the analysis of lighthouse experiences. Certainly there are numerous everyday examples of real time data being used to practical effect e.g. traffic management and flood defence to name two, while competitive economic participation in the global market place relies on sophisticated frameworks of constant data generation and analytics. However not all urban stakeholders enjoy equal opportunity in terms of capacity to access and exploit data platforms. The ordinary citizen in particular has a very poor relationship with data, seeing the term as abstract, unsure of its neutrality in terms of personal freedom, and not at all optimistic that it can become a day-to-day resource available through user-friendly channels. This detachment of the citizen from data is worrying. Data is the basic raw material used to generate an evidence base in order to engage with other stakeholders, influence policy, and negotiate with urban governance.

In order to understand this detachment from data, we need to look at the wider urban system. In doing so we need to recognize that technology and data are not ends in themselves but are available as powerful infrastructures to serve a range of goals emerging from a complex landscape of urban stakeholders where the citizen is often billed as a key player but is frequently side-lined. In which case the term Big Data might be better used when linked explicitly to promote a people and citizen perspective and prompt us to reflect on the relationship between citizens and data. So for example even though the terms Data-rich Cities and Smart Cities have a close relationship, neither of these terms could be considered to align comfortably with the concept of ‘People-friendly Cities’. One of the reasons might be that the evolving terrain of Smart-City activity has colonized the sphere of urban data, where commercial/technical interests, seek close working relationships with City administrations to deliver smart infrastructure, in a context where there is little incentive to create any meaningful role for the citizen. Another reason might be the abstract nature of data, and a history of detachment of the citizen from urban research.

This tendency of the Smart City to leave the citizen out of the loop is perhaps not surprising. Urban governance and city planning has been challenged for decades to harness the energy of citizens in the making of better cities. It is curious however that at a time when the infrastructure of the internet is creating optimism about openness, communication, and connection, that the 'black-box' technology of Smart Cities might be consolidating a status-quo where the citizen remains an outsider. This suggests a need not only to review the concept of Smart Cities but also to consider a much wider frame of reference where the citizen is placed at the centre of urban challenges, and is facilitated to read the city in terms of its complexity, sectorial interests and multiple scales. While data will constitute a 'red-thread' critical to forging a bedrock of evidence, the theme of 'people-centric Urbanism' better describes the thrust of the chapter. A central question will be a consideration of the critical scales relevant to the achievement of a platform.

Continuing with this line of thought, there is widespread deep concern among a range of professional disciplines regarding the current trends in Smart City development. Murakami (2015) considers Smart City as the archetypal urban form of the data-driven society. These pervasive distributed sensor networks, generating big data for forms of centralized urban management, bring together previously unconnected infrastructures such as video surveillance, met stations, traffic-lights and sewage systems, and while presented as largely civic, corporate and managerial, these systems have a parallel history in military strategic thinking and policy. Murakami reflects on the capacity of diverse human beings to flourish in cities where people are increasingly monitored and managed as logistical flows. He argues that if smart cities are to truly serve human flourishing, they need to be detached from narrow techno-economistic purposes and more truly grounded in social ecological thinking.

Likewise Bates (2015) is concerned with the increasing use of data analytics to gain insight in how to manage cities. She suggests that instead of seeking the truth of cities in data, we might better illuminate the flows of power and influence in the contemporary urban environment through close critical examination of these emerging, intersecting local data cultures in practice. Similar to Sassen (2012), Bates argues that by focusing on the complex and contested assemblages of political, economic, social and cultural processes that data product and flow are embedded within, we begin to understand data practices as specific articulations of social platforms situated within time and space.

Ruppert (2015) has also raised questions about smart city and data and the implications for citizens. If we are to increasingly know experience and enact cities through data, then we need to understand who are the subjects of that data and the space of relations they occupy. In a world where the Internet of things connects everything, and where data is produced about movement, location, activities, interests, encounters and public relationships, and where conduct is being governed through myriad arrangements and conventions, we need to question how data subjects become data citizens. Ruppert goes onto to challenge the separation between the real space and the virtual space. In doing so she defines cyber space as a space of social struggles, a space of transactions and interactions between and among bodies acting through the Internet. She asserts that these struggles constitute part and parcel of the programmable city.

These concerns about the need to contextualize data is raised by Thatcher (2015) who investigated data provenance and the need to critically frame data. He states that data sources and existing data appear in the literature as uncritical, pre-existing, de-contextualized representations of the world, and the dimension of provenance recedes into a technical issue. The intentionality of data is not signalled and the inscription of meaning that goes into data objects as socio-technical, emergent indicators is left out. The data is therefore taken to represent the world as objective reality.

The role and nature of data in cities has received the attention of Kitchin (2015) who explores citizen related data privacy/protection, arising from the development of smart cities in Ireland. Kitchin refers to a consistent link between the generation of data and various kinds of data informed urbanism. However, he contends that data informed urbanism is being complemented but increasingly replaced by another form of data generation termed data-driven networked urbanism. Whilst cities are becoming ever more instrumented and networked, with vast amounts of big urban data being generated and used to manage and control urban life in real time, Kitchin asserts that data driven networked urbanism is the key mode of production for what has widely been referred to as 'smart urbanism'. In doing so, he raises valid concerns about the politics of urban data, data ownership, data control, and data convergent access. Whilst data-driven networked urbanism purports to produce a common sensical, pragmatic, neutral, apolitical, evidence form of responsive urban government, it is nonetheless selective, crafted, flawed, normative and politically inflected. Hence data-driven networked urbanism provides a set of solutions for urban problems within limitations and in the service of particular interests.

1.6 City Futures

The debate about the future creation of Smart Cities has increasingly attracted the attention of both new technology driven companies and more tradition engineering design companies. Recently the company Arup (2010) outlines a very optimistic and enlightened view about how cities can benefit from smart technology. They define a smart city as one 'where the seams and structures of the various urban systems are made clear, simple, responsive and even malleable. The implication is that the networked connection between everyday objects provided through the 'Internet of Things' will provide all the necessary tools to deliver smart cities. However, this perspective raises the question about how can we harness the power of these emerging technologies in order for the individual citizen to take co-ownership of the issue not just traditional stakeholders. Otherwise the informed users of smart cities are in danger of developing architecture in which technology evolves solely to provide spaces for global players to create economic value, and start-ups to innovate.

For this economic argument to be relevant it must be complemented by an articulation of a strong vision for the role of citizens in future cities. This is a

city future where citizens are not only engaged and informed in the relationship between their activities and their neighbourhood but also the wider urban ecosystem. The citizen should be enabled to see the city as something they can collectively tune, such that it is efficient, interactive, engaged, adaptive, and flexible. In this strong emphasis on the social, Arup echo early smart city ideas of social science in the 1990s which saw the potential of information and communications infrastructure to enable not only economic development but also underpin quality of life improvements.

To achieve this improved quality of life in cities by means of digital connectivity, Mason (2015) raises genuine concerns about the nature and organization of systems in a smart city. These are systems comprising critical networks of the communication grids, energy systems and the 'Internet of Things', where every recorded change triggers change elsewhere. This real-time interconnection demands a new type of urban governance where the traditional restriction on flow between public and private sectors can no longer prevail.

Without wishing to be alarmist, cities are under great pressure from tech companies to initiate complex and costly smart city initiatives, which undoubtedly deliver tangible benefits to a city but may also evade or fail to address difficult social challenges. The initiatives run the risk of obsolescence and of getting locked into specific platforms. Critical questions arise as to who controls the system, who owns the data, and what are the implications for democracy.

Hence it is critical to be clear about the role of technologies in cities. The urban technologist Robinson (2015) for example advocates that any city that is really smart must combine both of these ideas, that technology in isolation is amoral and often banal, and that a vision for a better future is merely an aspiration without the means to achieve it. Hence there is an argument to reclaim the smart concept from technologies such as 'analytics' the 'Internet of Things' and 'Big Data' and return to its original meaning, using the increasingly ubiquitous and accessible communications technology enabled by the internet to give people more control over their lives, businesses, and communities. As a result Robinson proposes that, a richer debate should takes place between cities and tech companies, which includes a wider set of more holistic objectives. However as big business realizes big profits can be made from delivering objectives, a different dynamic takes over. The emphasis switches from research, exploration, and development to the marketing and selling of well-defined products and the subtle inter-twining of social, economic, environmental, and technical ideas get ground out.

In terms of re-focusing technology on citizen-supported objectives the city of Madrid has put forward radical ideas. The Podemos project backed Lord Mayor, Manuel Carmena, conceives of the city as an eco-system of diverse, competing, and uncontrolled human networks. Instead of asking which of the city's grids and networks we want to automate, she asked advisors; what are the social problems we want to solve. Commenting on a discussion document circulated by the Madrid City Authority, Mason (2015) pointed out that this identified three principles unwelcome in the world of high-profit tech companies; namely openness, democratic participation, and clarity in policy that the data generated from public

services should be publicly owned. The thrust of the City of Madrid's perspective is that city authorities should preferably fund open-source collaborative technology, underpinned by a value-system, which promotes open-access to power and a real debate about what we want technology to do for our cities. A good starting point is to ask what technology would look like if it served the people.

Reclaiming the smart city through wider perspective is echoed in several other significant initiatives. Coe et al. (2001) set out the stall in reflecting on how the collective intelligence of a community based model of governance would operate in an era of new technology infrastructure. More recently The Digital Enlightenment Forum [DigEnlight] a not for profit organisation established in Brussels whose aim is to achieve a better understanding of ways in which citizens, government and enterprises are redefining their relationships through technology. The initiative is inspired by the Enlightenment movement of the 18th century, which produced a seismic intellectual and societal shift that allowed innovation and creativity to flourish. As such, DEF seek, to apply the core principles of the Enlightenment; knowledge should be shared, people can think for themselves, and intellectual and scientific enquiry should be in the service of all, to release a similar era of creativity through technology. It is committed to an inter-disciplinary approach, drawing engineers, anthropologists, social scientists, and designers, into working relationships to see how humans engage with digital life and to see what options they have.

A similar outlook is being promoted by "Insight", the Research Centre for Data Analytics at University College Dublin, that operates at the interface of multiple sectors, including academia, applied health research, business analytics, and social media. Following a realization that there was an organization-wide concern about the place of the citizen in data research, Insight set out to achieve consensus on an agreed set of values. An Insight delegation presented a discussion paper in Brussels 'Towards a Magna Carta for Data' aimed at lifting the discussion above area of data protection and privacy and framing the challenge in a wider context.

Lastly the wider context for data was also the subject of contributions at the 2015 Canadian Open Data Summit held in Ottawa. Davies (2015) affirmed that while Open Data had been overtaken in many settings by talk of Big Data, Smart Cities, and even by talk of data driven governance, open data was still a big idea. He questioned the original framing of Open Data as another data community, and referred to the recent African data consensus, which had agreed 15 thematic categories of data. He suggested in this context that the role of the Open Data community could be to frame the over-arching and ethical manner in which data is approached across all thematic areas. Furthermore, Davies raised the concept of the commons, suggesting we need to reclaim the politics of open data as a way of challenging secrecy, and as a way of promoting a foundation for transparency, collaboration, and participation.

At the same Open Data Summit, Panthea Lee of REBOOT (2015) reflected on the political change sought by citizens is not always aligned with the focus of discussion in the Open Data community, which is often more concerned with the granular dimensions of Open Data. We thus lose sight of the larger ways in how Open Data promises change. Lea stressed the importance of asking, how we can achieve the impact we desire, before seeking technical solutions. She felt that as

citizens we are asking systemic macro-level questions about say health and the environment, but as an Open Data community we are largely pursuing incremental micro level change. If the Open Data community can enable more informed, vibrant, democratic dialogue, then it is their responsibility to help facilitate such dialogue.

1.7 The City Sounding Board

It is all very well criticizing the shortcomings of top down approaches to future city development based largely on a techno centric Smart City agenda, however it is the responsibility of urban planners to develop alternative frameworks and processes to promote a citizen centric bottom up approach. Recently an opportunity arose via a European research network funded by COST research organization that promotes Cooperation for Science and Technology. The COST Action TU1204 focused on the concept of People Friendly Cities in a Data Rich World by critiquing the parallel concepts of Collaborative Urbanism with Smart City.

Although the term Smart City might suggest a capacity and commitment to marshal a collective civic intelligence to tackle city challenges, the People Friendly Cities project seeks to debunk such perceptions, pointing to the fact that Smart City initiatives are often overly focused on achieving narrow objectives in utility efficiency, and seldom focus on human need. Instead, 'People friendly Cities' draws on an urban planning inspiration, incorporating broad notions of sustainability and community resilience, built around a central challenge of enabling citizenship. The general thrust is to explore how a rich vein of collaborative urbanism can be facilitated, and supported by efficient processes, methodology, and tools.

Emerging from the COST Action is the concept of the City Sounding Board [CSB] that constitutes a framework placing the citizen at the centre of the urban process. The CSB incorporates the thrust of an urban planning platform, works within a systems sensibility, and seeks to create a user-friendly framework aimed at making city process intelligible and inviting to the everyday citizen. Central to the framework is the metaphor of the 'table', a place where conversation takes place, where you feel welcome, and where you can bring ideas or access a network. The concept of the CSB centres on a dynamic framework which can include a spectrum of activities ranging from data collection, storytelling, identification of issues and needs, analytics, and actions under various themes. The word 'Sounding' in the title strives to indicate a search for an integrated and broad spectrum collaborative response to an understanding of 'place' and facilitating an open-ness to participate critically in that response through all phases in taking the pulse of the urban landscape.

Embedded in the concept of the City Sounding Board is the methodology of 'City Infrastructures' which can help interrogate aspects of governance, the role of institutions, and the weight and role of the citizen in any chosen city or city neighbourhood.

The term Infrastructure has a much broader meaning than the traditional physical parts of the built environment. Instead, City Infrastructures comprise the full range of soft and hard infrastructures including utilities, services, networks, social groupings, and personal skills that we as a citizen can call on in achieving success in our life's objectives. Of course, the reality is that it is not a level playing pitch, and many citizens are denied access and are disadvantaged. Part of the reason is the lack of clarity about the role and delivery of infrastructure, and the relationship to livelihood and livability. This is partly explained by a perception of infrastructure as being just utilities, though sometimes utilities and institutions. The CSB seeks to draw out and interpret the integrated role of all categories of infrastructure outlined above and to leverage 'Interrogative Infrastructure' to produce new insights on the relationship between the citizen and institutional society. As such, the CSB offers the opportunity to create a dynamic framework, inspired by an urban planning philosophy and systems thinking which acknowledges complexity and can relate to multiple city scales, sectors and themes. The CSB is thus supported by a methodology of Interrogative City Infrastructure aimed at unlocking the structure, rationale, and performance of services, utilities and social capital in relation to human need.

1.8 Conclusions

We have explored how citizens can harness the infrastructure of the Internet and make a real difference in how we tackle the challenges facing the planet, the city, and the urban neighbourhood. We have outlined how these three scales are interconnected, and how aspects of population growth, economic activity, and social inequality, have international dimensions which also impact on the scale of the city, and become visible even at the most local level. We have also acknowledged however, that even before the evolution of the Internet, the citizen had a very marginal role in city governance and the making of cities. Nevertheless, we are now in a new era with a new set of conditions and challenges prevailing that requires a new perspective on the integrated nature of soft and hard City Infrastructures. The emergence of World Wide Web 2.0 with the emphasis on user-generated content, usability, and interoperability along with multiple social media platforms, should enable us to share, communicate, collaborate and even co-produce together. It is curious therefore that at a time when we face serious risk in terms of the future of the planet, and when our cities suffer from an inability to marshal a collective intelligence to creatively address challenges, we have not seen a revolution in how the virtual world might deliver a new culture of urban governance.

It is obvious that social media has quickly developed as a personal infrastructure for family and friends, plays a big role in terms of recreation and entertainment and education, and is seen as increasingly important to one's social esteem. At the same time, it is evident that a new form of creative Internet is emerging where individual citizens configure as groups to achieve some economic or social objective. It does

seem that the exploitation of the Internet for social media and to achieve specific objectives represents a welcome increase in capacity for the citizen. We must ask however, how the imagination of the citizen might be re-tuned towards those larger ambitions outlined above, and how this might be enabled. It does seem that the fundamental objective to achieve a sustainable planet and a sustainable city must include openness, transparency, and a generous partnership with citizens underpinned by trust. In the 12 principles of the Freiburg Charter (2010) for Sustainable Urbanism, for example, the four final principles relate to the contract with the citizen. The 'Learning from Cities' series on Utrecht (2012), stressed five dimensions of citizen engagement; connecting, communicating, collaborating, controlling and changing.

Let us assume therefore, that it is a very desirable objective to build a citizen capacity towards awareness, sharing responsibility, and making a contribution. Let us also assume that many citizens have a varying awareness of global, city, and neighbourhood challenges, want to connect and contribute but feel powerless and detached. The challenge therefore is to identify what is needed to change the status quo and unlock the potential of the citizen to be a key player. The arguments aired suggest there are multiple inhibitors acting against a culture of citizen engagement but there are also new forces.

In building a framework to support a culture of citizen engagement, the concept of the 'civic commons' is a useful starting point. One reason why citizens do not engage is a lack of opportunity for meaningful public discourse, and a shrinking in the true public domain of cities. Increasing privatization across residential, economic and even cultural sectors removes a sense of public entitlement and erodes the footprint of the civic. There is also a retreat on the part of city institutions, labouring to fulfil narrow briefs, which limit an engagement with an open civic discourse. In parallel is the technocratic trend in city governance and city-planning which sees a small number of partners working closely with City Authorities and where citizens are drip-fed progress reports and informed of decisions actually made. In this more privatized technocratic city, there is a bleaching in public life, an absence of debate on value systems, and a danger of colonization by powerful economic interests who will seek to manipulate city infrastructure to their own ends. The nurturing of the public commons is therefore critical to foster a public life and create space for citizen conversation. A culture of public discourse set within a landscape of the civic, will also permeate city institutions and city agencies, and will almost by definition affirm the right of the citizen to connect and be involved. Such a culture will be motivated to evolve institutional and process support to draw in citizens as real partners. The question is, how can a culture of civic stewardship and creative citizen engagement be developed, maintained and enriched.

In conclusion there is a tendency in the contemporary city, for the nuts and bolts of arguments to revolve around specific projects or policy proposals, or around a response to a crisis. This tends to produce a compartmental logic and a silo type perspective, which fails to address the challenge of unity. In asserting a need for a 'civic Commons', we must reach beyond a narrow functionality and become comfortable with ideas, innovation, and cultural renewal coming off the floor of the city. This needs a new mind-set and new institutional alignments.

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