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NOVEMBER
2015

WISE CITIES: MODELLING THE LOCAL CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS

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Urban development in perspective: from smart to wise cities

The notion that the world is moving into the urban age has long since been overtaken by reality: half of the world's population was already living in urban areas in 2008, within five years the urban population of developing countries is expected to reach 50% and by 2050, 75% of the world's population will be living in urban areas. These facts prove that the urban age is a trending topic, and that the global challenges associated with the expansion of urbanisation and demography will transform the role of the city in promoting people-centred, sustainable urban development in line with a new global agenda embodied in the Sustainable Development Goals (SDGs). The interface between the local and global dimensions cannot have a better setting than the city.

Increasingly, the policies enacted and action taken to promote inclusive growth,

reduce growing inequality and face the challenges posed by climate change are no longer the exclusive preserve of nation-states and supranational institutions: such issues require the involvement of cities too. The very forces that are transforming our global landscape are also pushing cities around the world to become economically viable, environmentally sustainable and socially vibrant if they want to be relevant and useful in the 21st century. The kind of city that will be shaped by these forces still remains largely unknown. Notwithstanding this, we might start to envisage the type of city we should aim for in order to give us a chance to influence the outcome of these processes if we want to enjoy happier and more meaningful lives.

For many years planners, scholars, authors and architects have aimed for a strategy to make cities hubs of innovation and economic activity while addressing the side effects of urbanisation and population growth.

The notion of wise cities emerges from growing evidence that smartness is failing to create more inclusive, sustainable and democratic cities.

One of the big challenges for this century's urban planners and managers is to design a urban model that is human-centred and takes into account each city's idiosyncrasy and cultural trajectory in order to avoid a "one-size fits all" approach.

The wise city is culturally oriented, as it envisages urban development policies and practices tailored to the citizens' cultural background, socioeconomic context and environmental fitness.

The wise city overcomes the pro-technology or anti-technology dichotomy. It is techno-culturally wise by studying the experience, consciousness and meaning derived from mutual interaction between people and tools and/or technology.

Inequality, migration, climate change and the rise of global cities in the governance architecture are global transformations likely to impact the wise city in the short term.

Cities are an impressive lab for solutions to fight climate change and environmental degradation.

The ultimate goal of the wise city model should be the improvement of the citizens' quality of life, including their happiness and subjective well-being, in resilient cities.

Part of this endeavour feeds into what some have called the 'science of cities' which, although still emerging, has produced some remarkable innovations in the urban imaginary.

Terms like 'sustainable city', which became the norm in the future cities discourse in the 1990s and early 2000s, were soon superseded by 'smart cities', globally recognised today as the term of choice to denote ICT-led urban innovation, and new modes of governance and urban citizenship. But cities are living organisms, constantly changing and adapting to external and internal forces. Hence, once concepts like 'smart cities' become popular, they need to be tested against new realities: a first wave of 'smart cities 1.0', focused on the way ICT can improve city functionality, and was soon replaced by a second wave of 'smart cities 2.0' that added emphasis on issues of good city governance, public-private partnership for urban management, sustainability and inclusivity.

Despite the evolution in cities' approaches and the efforts to find the ultimate recipe for explaining urban development, there are at least two reasons why the science of cities keeps evolving. The first is quite obvious: with such diverse 'organised complexity' in the character and the systems of cities it is almost impossible to capture the nuances of the multiplicity of cities within a single catch-all formula. The second seems less evident: we need to interpret the smart city concept

Wise cities place issues of equity and social inclusion at the heart of their policies.

through the lens of culture, nature and the role of the human being at the heart of the city process of transformation. We need cities to be not only smart but wise.

Why we need wise cities: culture and the human being at the heart of city development

Smart cities initiatives are the sign of our times. From Singapore to Barcelona, Kansas City to Medellín, almost every major city in the OECD and increasingly in emerging economies has experience using ICT as a means to meet their operational and strategic objectives, be they in the field of the environment, transport, governance or citizen participation.

But every major breakthrough in the field of social sciences (including the 'science of cities') always comes at the price of leaving something very important behind or simply unanswered. Think for example of issues such as poverty and inequality, human insecurity in all its dimensions (from psychological to structural) and unhappiness. The case of smart cities is no exception, as urban strategist Boyd Cohen points out. He rightly reminds us that the concept of smart cities has evolved from an exclusive technology-centric vision of what constituted a modern city ('smart cities 1.0') to an endeavour to identify significant opportunities for using technology to facilitate improved quality of life for citizens and visitors ('smart cities 2.0'). But this evolution doesn't stop here.

The question that follows is straightforward: is there a 'smart city 3.0' that could go beyond the dominant role of ICTs mixed with a thin layer of environmental and social concern? Some think there is, and they use Vancouver, Barcelona, Medellín and Vienna as a showcase. These cities are now embracing strategies for engaging citizens' active participation in order to drive the next generation of smarter cities. They are also placing issues of equity and social inclusion at the heart of their policies. Important as they are, an alternative version of 3.0 is possible: one that includes and transcends generations 1.0 and 2.0 by adopting a cultural, human-centred approach at the heart of any holistic urban development process and its management.

This notion emerges from growing evidence that smartness, as currently conceived, is failing to create more inclusive, sustainable and democratic cities. Robin Hambleton (2015), from the University of the West of England, states that the smart city debate has proved too limited, both theoretically and operationally, with the majority of studies putting a lot of emphasis on technological aspects and failing to examine how smart city policies relate to the politics of power in the cities concerned.

We should attempt to move beyond the limiting confines of the smart city debate and start developing the guiding principles of a city in which universal values (or virtues) relating to justice, democracy, care of the natural environment, compassion and excellence steer the creation of the 'wise city'. Indeed, one of the big challenges for this century's urban planners and managers will be to design a urban model that is human-centred and takes into account each city's idiosyncrasy and cultural trajectory in order to avoid a "one-size fits all" approach. The ultimate goal of this model should be the improvement of the citizens' quality of life, including their happiness and subjective well-being, in resilient cities.

The conceptualisation of the wise city as a new urban development paradigm does not discredit the smart city model. Indeed it includes it and transcends it. It moves beyond technology to place the citizen at the heart of urban development. This transition overcomes the ambiguity of the smart city concept, which is sometimes controversial, as it is prone to different interpretations that see the term 'smart' as not always referring to the ultimate benefit for all citizens' well-being. 'Smart' can also imply a slickness or shallowness, and even when solely applied to technology, there are several issues whose effects on inclusivity and well-being are still unknown, such as the digital divide, power structures, the impacts of digital life, and privacy.

Therefore, the wise city concept overcomes the aforementioned debates by orienting urban development challenges around citizens' well-being. The wise city reflects the centrality and prioritisation of citizens by channelling all that is essential in the art and science of urban living and sharing towards maximising well-being. Against this backdrop, the wise city is culturally oriented, as it envisages urban development policies and practices tailored to the citizens' cultur-

al background, socioeconomic context and environmental fitness. In an increasingly interconnected and interdependent world, localising development policies and practices according to each city's idiosyncrasies is critical to ensuring their effectiveness and success.

Technology is a very important asset for the wise city, not as an end but as a tool for improving the provision of public and private goods and services that increase citizens' well-being. Therefore, the wise city overcomes the pro-technology or anti-technology dichotomy. The wise city is techno-culturally wise, which means that it embodies the advantages of modern science and technology by studying the experience, consciousness and meaning that is derived from mutual interaction between people and tools and/or technology.

Techno-culture allows cities to research and design policies that contribute to shaping social capital. Hence, wise cities' governance focuses on fostering norms, networks and organisations built upon trust and reciprocity. In this way they better contribute to social cohesion, inclusive economic development and citizens' well-being by empowering the capacity of their citizens to act and satisfy their needs in a coordinated and mutually beneficial way. The wise city inherently integrates another helix – the citizens – into the classic urban innovation model called the triple helix (government-industry-academia). With the quadruple helix in place, wise cities can use policy as the social organisational form to facilitate citizens' access to common well-being, both material and non-material.

Wise cities in the age of global transformations: from a local perspective to a global approach

Paraphrasing the title of a famous book, the world is becoming flatter, more crowded, hotter and unequal, and cities are a good example of this. Cities are expanding into metropolitan areas and regions in a context of environmental and climate change challenges economic uncertainty and increasing inequality. These trends will leave their footprint in the city sooner rather than later. Can the opposite be possible? Can cities use their assets wisely to influence the forces that shape our world in the 21st century?

Which global transformations are likely to impact the wise city in the short term? We will focus on a handful of the most important at a global scale: inequality, migration, climate change and the rise of global cities in the governance architecture. As regards inequality, this is probably one of the hottest issues on the policy agenda. Inequality may be the result of global economic forces, but it matters in a local sense. By way of example, and only in the USA, New York City's Gini coefficient (the standard measure of income inequality) is equal to that of Swaziland while Chicago's is close to El Salvador's and San Francisco's to that of Madagascar. The social, economic and political implications of this inequality for the stability of a city and the well-being of its citizens are manifold and yet to be measured and quantified.

Migration is another mega-trend with implications at local level. Although integration, inclusion and the protection of migrants' are dealt with by nation-states, the reality is that cities are the ones that have to manage the inclusion and integration of migrants at social, institutional and economic levels. The initiative set up by the Barcelona city council to create a network of cities across Spain to help some of the hundreds of thousands of desperate migrants arriving in Europe is a good example. It must also be remembered that once in the city, most migrants struggle to break through two main barriers: informality and instability. The former is a constant reminder that they are outside the "inclusive circuit", with informal jobs, education, healthcare and housing the areas most affected by this situation. The latter tells us about their vulnerability and, in many cases, their lack of motivation to invest, build and flourish. The economic and social loss to the migrant is substantial, but it is even greater for the city.

A wise city recognises that migrants, their culture, work force and know-how are valuable assets. They contribute to growing the economy and providing the diversity that characterises many cities worldwide. A wise city provides an environment where migrants can be an important part of the city's social fabric.

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As for climate change, nobody doubts that it has both direct and indirect impacts on cities (especially those most vulnerable in developing countries) affecting human health, infrastructure and services, economic activities and social capital. It is true that cities contribute to climate change (around 70% of energy-related greenhouse gas emissions) and generate a massive amount of waste, but cities are also an impressive lab for solutions to fight climate change and environmental degradation: better waste management, better access to energy (specifically for the urban poor), measures to curb pollution, climate-resilient infrastructure and more green spaces to improve the resilience and quality of life for all city residents are just some of the examples that are currently tested and implemented in many cities. The wise city cannot lay claim to all these achievements but it certainly incorporates them in its social and environmental strategy, trying to strike a balance between the energy needs of the city and the protection of its environment and its citizens' physical and mental health.

Let's not forget that although technology will be at the heart of the fight against climate change and can provide many insights into citizens' needs and help improve urban services, it will only be useful if it gives cities the possibility to make evidence-based decisions and the means to hold their leaders to account for what they promise.

A final word on the relentless process of the nation-state becoming irrelevant and the ascent of cities in global governance. "The more the world is urbanized, the more difficult it

becomes for nations to accept this” said Yunus Arikan, head of global advocacy for ICLEI-Local Governments for Sustainability (ICLEI-LGS), the world’s leading network of over 1000 cities, towns and metropolises committed to building a sustainable future, during the climate talks that took place in Lima in December 2014. Perhaps this is a symptom of the growing irrelevance of nation-states and so-called “Westphalian diplomacy” in the 21st Century. Nation-states do indeed have difficulty retaining all the political and economic powers that they held for many centuries. Their capacity to influence diminishes in a context where important decisions are taken by supranational entities while, at the same time, real problems increasingly become the responsibility of local and regional authorities, who are closer to the needs and wants of their citizens.

Indeed, today many cities have substantially more economic weight, are hubs of innovation and international connectivity, and exert more diplomatic influence on the world stage than many nations. We can see cities as transnational actors competing to produce the best “place branding”, including Olympic bids, tourism and investment promotion, and city-specific public diplomacy campaigns. We witness how cities show their growing ambition as autonomous diplomatic units and international power brokers.

If there is one certainty it is that this trend will accelerate as global cities grow. We need therefore to better understand the dynamics between global cities and traditional nation-states

Wise cities stress the importance to put trust, confidence and human relations at the centre of any urban initiative that promotes inclusive, sustainable growth.

to tackle many of the challenges that have been described so far. With the wise city concept, cities have the chance to use all their resources to conduct diplomacy in an assertive and constructive way, always based on their own idiosyncrasy, socio-cultural identity and local constructs.

Localising the SDGs: contribution from a wise city

The recent adoption of the SDGs agenda on September 25 2015 by the UN General Assembly has set the world on the path of sustainable development and inclusive growth for the next 15 years. All SDGs have a local dimension that is essential to their achievement and therefore represent a step forward in the recognition of cities as engines of development. For the first time ever, there is a global goal that addresses urban planning as a method for sustainable development embedded in the global development agenda. SDG 11 sets out a bold objective to “make cities inclusive, safe, resilient and sustainable”, including a new focus on participatory and integrated planning processes for cities, inclusive green and public spaces, climate change resilience and resource efficiency.

But cities’ contribution to the SDGs goes beyond action on urban sustainability. For example, SDG 7, which calls

for improvements in energy access, building efficiency and renewable energy sources has already been taken up by many cities around the world as it relates to buildings, which contribute over a third of global greenhouse gas (GHGs) emissions and energy use. Many cities are also working towards achieving SDG 13 on mitigating climate change. For example, cities are launching initiatives following the GHG Protocol for Cities, participating in ICLEI-LGS’s Transformative Actions Program and signing up to the Compact of Mayors.

Strictly speaking, the process of localisation involves the transposition of the challenges and opportunities presented by the SDGs to sub-national level. This runs from the setting of goals and targets to determining the means of implementation and the use of indicators to monitor progress. Each country will have to streamline its development and economic goals to this agenda and will be requested to monitor and account for its progress towards the targets that have already been adopted and the indicators that will be designed in early 2016.

Being such a broad and universal agenda it will not be very difficult to contribute to the SDGs. So what will really make the difference? As simple as it might sound, it is the political will to implement the right policy choices that will make a real contribution towards the objectives outlined in the post-2015 agenda. And every policy choice needs a narrative to help policymakers identify the outcomes, instruments and

partnerships needed to attain the goal of an inclusive and sustainable city. In the case of nation-states and international institutions, that narrative seems more or less agreed and shared as shown

by the body of work done by the UN and its member states in the process leading up to the adoption of the SDGs. We now need a narrative for cities.

A number of issues emerge in the case of the wise city. Is its contribution very different from any other “sustainable and smart” city? Let us first begin with the entry points for a wise city in the framework of the SDGs. The following table gives a snapshot of potential areas of contribution:

As can be seen, a wise city is a holistic city with multiple themes or components that ensure a sustainable quality of life for citizens. This list is by no means exhaustive and will grow over time as we know more about the implementation of the SDGs through national indicators. The selection of entry points could be interpreted as a straightforward exercise and, while recognising that this is only the starting point of our analysis, its purpose is twofold: on the one hand attracting as much attention and constructive criticism as possible and, on the other, mainstreaming the basic principles of the wise city in the post-2015 agenda.

The contribution to the SDGs and the well-being of people needs, however, a set of enabling factors to release the full potential that lies at the heart of the wise city. Some already exist, others may be in an embryonic state but all have the

SDGs	Entry points
1. No poverty	<ul style="list-style-type: none"> • Inclusive economic and employment growth and opportunities for all • Business and skills development centres, specialised business parks and incubators locally supported and embedded in the city's development vision
2. Zero hunger	<ul style="list-style-type: none"> • Smart sanitation, public health and safety for all
3. Good health and well-being	<ul style="list-style-type: none"> • Water and air quality • Smart waste and environmental management • Happiness and subjective well-being • Cultural integration and appreciation • Mindfulness
4. Quality education	<ul style="list-style-type: none"> • Business and skills development centres, specialised business parks and incubators locally supported and embedded in the city's development vision • Education and capacity building • Educational systems based on multiple intelligences, creativity, happiness and well-being
5. Gender equality	<ul style="list-style-type: none"> • Engagement with citizens to ensure relevant financial and business services are gender-responsive • Improve capacities and practices in disaggregated data collection and analysis • Social inclusion, stakeholder engagement and participation
6. Clean water and sanitation	<ul style="list-style-type: none"> • Smart sanitation, public health and safety • Water, waste and energy management
7. Affordable and clean energy	<ul style="list-style-type: none"> • Smart energy management • Energy access to all
8. Decent work and economic work	<ul style="list-style-type: none"> • Inclusive economic and employment growth and opportunities for all • "Circular" economy, collaborative economy, social entrepreneurship, behavioural economics
9. Industry, innovation and infrastructure	<ul style="list-style-type: none"> • Smart transport, buildings, communications and spaces • Social and cultural innovation • Fab labs • Resilience
10. Reduced inequalities	<ul style="list-style-type: none"> • Social, economic and political inclusion, stakeholder engagement and participation • Active policies to avoid 'ghettoisation'
11. Sustainable cities and communities	<ul style="list-style-type: none"> • Green buildings • Resilience • Affordable housing • Social capital (trust, solidarity, security, integration)
12. Responsible consumption and production	<ul style="list-style-type: none"> • Water, waste and energy management • Social engagement for better social capital
13. Climate action	<ul style="list-style-type: none"> • Smart energy, water, waste and environmental management • Hubs of innovation • Human and social resilience • Global alliances with cities, institutions and organisations
14. Life below water	<ul style="list-style-type: none"> • Natural and cultural resource management, including biodiversity and green cover
15. Life on land	<ul style="list-style-type: none"> • Smart environment • Natural and cultural resource management, including biodiversity and green cover
16. Peace, justice and strong institutions	<ul style="list-style-type: none"> • Social engagement and participation • Open, transparent and accountable local institutions and services • eGovernance • Social capital (trust, solidarity, security, integration)
17. Partnerships for the goals	<ul style="list-style-type: none"> • City as development actor in North-North, North-South and South-South partnerships

Source: authors' own with inputs from UN SDGs programme and PWC (2014).

same feature: they form the core foundations of the city. The list includes local governance, public and private cooperation, a vision centred on the human being and the restoration of social capital, transparency in big data, the promotion of participatory planning and the need to tap innovative financial sources. These enabling factors cover a wide range of issues from democracy and participation and the need to reconcile public and private interests for the common good, to the importance to put trust, confidence and human relations at the centre of any urban initiative that promotes inclusive, sustainable growth. We hope to further develop them in the future, as we feel there is still a bulk of analysis to be done in this area.

Towards a model of wise cities

Cities are used to being ranked. This is the way they market their attributes and use performance indices as a means to benchmark themselves against one another in order to attract business or simply to become more influential in the international arena. Normally a performance factor is attached to items such as economy, people, governance, mobility, environment and well-being, and is compared in order to come up with a ranking. The triple helix model of smart cities is a good example of this. There is also a large body of literature on benchmarking tools like the 'Global City Performance

Today many cities are hubs of innovation and international connectivity and exert more diplomatic influence on the world stage than many nations.

Measurement Indexes', the UN Habitat 'Good Urban Governance Indicators' or the 'Local Sustainable Development Indicators' to name just a few.¹

These tools would be a good starting point for designing a model for the wise city as they gather together many of the most useful indicators and dimensions for our aim: to assess the performance of a city in terms of its ability to bring fulfilment to people's lives. But a set of new indicators will be needed in order to grasp the principles embodied in the concept of the wise city, which are more difficult to measure. Dimensions such as well-being, techno-culture, social capital or the quadruple helix need their own metrics to measure performance and interrelations with other variables. Our purpose, however, is not to create a 'ranking' for cities to compete in. We aim at developing a methodological instrument that captures both the philosophy and the practicalities of getting things done using the wise city approach, for the benefit of the citizens.

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