Expanding Cities – Diminishing Space: Will Cities Remain Liveable, Accessible, Human-Oriented Places: for Whom and How?

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The CORP 2018 brief of 'Expanding Cities – Diminishing Space'[1] rests on the unassailable credo in techno-fixes. The argument here is that while technologies have always influenced urban change, cities have evolved with techno-fixes in combination with many other development processes. As evidence shows that with globalisation development has become more unevenly distributed in urban space what matters is whether techno-fixes are contributing or alleviating uneven spatial and social justice and urban quality of life.

Keywords: city shape, urban change, holistic solutions, city governance, urban expansion

1 "CITIES ARE GROWING" – ROLE OF TECHNO-FIXES

Regarding urban dynamics, CORP2018 affirms that cities are always expanding - sideways, upward, downward, and in use over time – by attracting and concentrating people hungry for more space. In that way they are encroaching on assumed precious countryside, living above their ecological footprint by consuming more than their fair share of finite resources and polluting the environment. Indeed, population is driving urban growth with 3.3 billion people living in cities in 2014 (54%) expanding to 5 billion by 2030 (66%). [2] Under pressure city managers are looking for short term fixes: punitive, such as traffic congestion charging, or divisive, such as attributing more road space to the strongest lobbies. For planners though a key question is whether there is a pathological threshold of space-time concentrations in cities.

CORP18 also affirms that retreat – probably meaning shrinkage - and regeneration areas are getting smaller with the contribution of short lifespans of certain types of modern buildings. What is not mentioned but matters for urban quality of life is the pressure on the public realm and open spaces inside cities, due to speculative activities generated by rising land and property values, in turn driven by more users of the city - residents, workers, visitors. but equally importantly by remote investors, financiers, real estate property owners, landlords.

Help is claimed to be at hand. The 'smart city' ideology states that technologies can fix urban problems and control urban activities. CORP2018 confirms that "by means of information and communications technologies cities are transformed into smart organisms designed to work perfectly to create a high standard output in terms of knowledge, carbon footprint, mobility and logistics, big data, etc." A critical issue is what role techno-fixes are playing in the production of increasingly privatised, non convivial spaces.

It is worth remembering that, in the past, techno-fixes have not reduced physical-material urban demands and, contrary to expectations, have often led to their growth. For example, the introduction of mass international telecommunications technology in the 1960s had increased - not reduced - face to face interaction, thus contributed to expanding transportation, including transatlantic flights. Current techno-fixes – including 'smart city approaches' – may well improve urban efficiency and profitability, but at a social price which has not been factored into the equation. For example, Alistair Bathgate, the leader of Blue Prism, a software company which substitutes human labour with robots rejects 'robo-geddon', but his reference to RWE-Npower where 2 managers suffice to oversee 300 robots carrying out the work of 600 dismissed full time staff seems to contradict his optimistic view. 3

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[1] CORP2018 Conference Topics
Cities are growing. Retreat and regeneration areas are getting smaller. This brings along enormous challenges and threats. At the same time there are unprecedented technologies that might help solve the issues.
Can "Smart Technologies" and "Smart Cities" be the answer on how to handle the challenges of urban growth?
What is the role of urban planning in those highly dynamic developments? Let us discuss these issues at REAL CORP 2018!
[2] United Nations Population Fund.
[3] Evening Standard, Business interview with Alastair Bathgate, CEO of Blue Prism

2   'SMART CITY': DEFINITIONS AND STRATEGIES

Smart cities, initially promoted by ICT corporations, spread throughout the world, although definitions of 'smart city' vary widely, ranging from narrow focus on infrastructure to enabling citizens and communities to act smarter. One 'smart city' definition close to the 'smart city market' promoters has been devised by ITU. [4]

"A smart sustainable city is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social and environmental aspects."

'Smart cities' became almost interchangeable with 'eco-cities'[5] when the latter resorted to the techno-approach of 'smart cities'. A differentiated definition of eco-cities arose from a global survey of 79 eco-cities[6] which identified their common features as they shifted from conceptual experiments to practice-led projects embedded in policy. Subsequently, the International Eco-City Initiative quantified eco-city policies and technological implementations by developing and using eco-city indicators, standards and frameworks.[7] Based on the analysis of 170 eco-city initiatives their Bellagio report evaluated their international effectiveness as a measure of 'sustainable urbanism'. A desk appraisal of eco-cities and smart cities in Asia identified communalities and diversities of conceptual-cultural, eco-design, and eco-innovation policies and practices and concluded that quality of life remained the essential criterion of sustainability.[8] Another comparative analysis explored transferable lessons about eco-cities between Europe and China.[9] Austin Williams goes as far as discarding any attempt at defining eco-cities or smart cities in China, although he uses the terms to analyse China's recent urban development processes with focus on China's use of ICT and other advanced technologies in urban development.[10]

The stance here is that planning and urban development are not led just by physical or technical drivers but are interdependent with citizen interventions. It is beyond the scope of this short position paper to verify/falsify the quantitative part played by ICT in urban development, management and usage.[11] Instead the paper refers to the IEEE models[12] to illustrate a mainstream techno-perspective of smart cities in urban development which also acknowledges citizen demands. Beyond that, it selects two opposing standpoints, a theoretical-ideological-formal non-techno-fix one developed in 'The Robust City'[13] and a pro-techno-fix one

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[4] Definition of 'smart city by ITU (International Telecommunication Union), a United Nations specialised agency for information and communication technologies. . http://www.itu.int/en/ITUT/focusgroups/ssc/Pages/default.aspx

[5] The original definition of ecocity was coined by Richard Register:
" -An ecologically healthy human settlement modeled on the self-sustaining resilient structure and function of natural ecosystems and living organisms
- An entity that includes its inhabitants and their ecological impacts
- A subsystem of the ecosystems of which it is part — of its watershed, bioregion, and ultimately, of the planet
- *A subsystem of the regional, national and world economic system."* http://www.ecocitybuilders.org/why-ecocities/the-solution/ecocity-definition/
Richard Register, 1987, Ecocity Berkeley: Building Cities for a Healthy Future, North Atlantic Books, with definition of 'ecocity

[6] Already in 2009 eco-cities were occurring globally but remained locally diverse. Simon Joss, Eco-Cities – a global survey 2009, governance and sustainability. 2010. International Eco-Cities Initiative. Westminster University.

[7] Simon Jost (ed).Tomorrow's city today, eco-city indicators, standards and frameworks, Bellagio conference report 2012. International Eco-Cities Initiative. University of Westminster

[8] Judith Ryser. 2013. Asian Eco-Cities, a critique. In: FuturArc, the voice of green architecture in Asia, march-April 2013, I Volume 29.

[9] Judith Ryser, 2013, Eco-cities in Action, sustainable development in Europe: lessons for and from China? In: EU-Asia Dialogue, Sharing European and Asian Best Practices and Experiences. 2014. Konrad Adenauer Stiftung. .

[10] Austin Williams, China's Urban Revolution, 2017, Routledge

[11] As an indication, the then DTI (UK Department of Trade and Industry, estimated the global market for smart city solutions and additional services required to deploy them at US$ 408 bn. by 2020. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/249423/bis□13□1217□smart□city□market□opportunties□uk.pdf

[12] Institute of Electrical and Electronics Engineers, http://smartcities.ieee.org

[13] Tony Hall. The Robust City, 2017, Routledge

based on 'China's Urban Revolution'[14] to discuss the contribution of technology to urban development and how it relates to other planning considerations and citizens' aspirations.

3 IEEE MODELS

Without entering into their technological details of the IEEE models[15] what needs mentioning is that the ICT trends identified by IEEE aim to support urban functions, such as infrastructure monitoring, act as backbones of digital media enterprises, household security, citywide transportation monitoring, etc. All that requires ICT infrastructure ranging from low bandwidth wireless technologies for free citywide services to dedicated fibre optics for backbone needs. The IEEE paper attributes little attention to issues of data security and privacy when publicly collected information is made available to third (mainly private) parties, which is IEEE's way to engage citizens but intends to deal with security, privacy and environmental sustainability at a later stage.
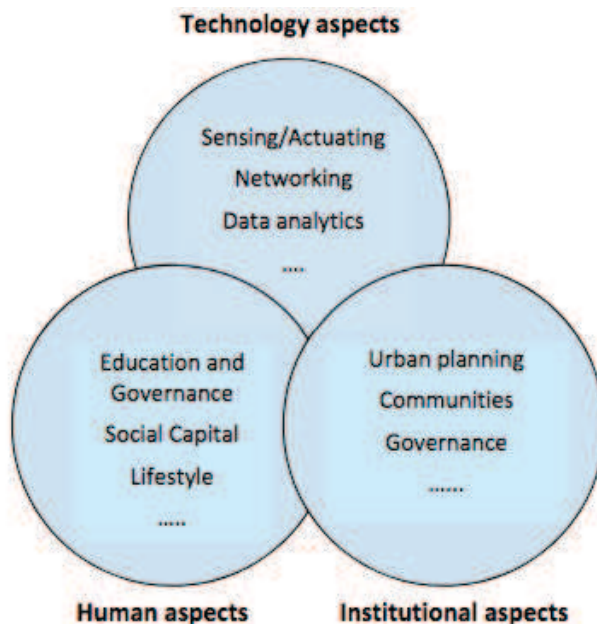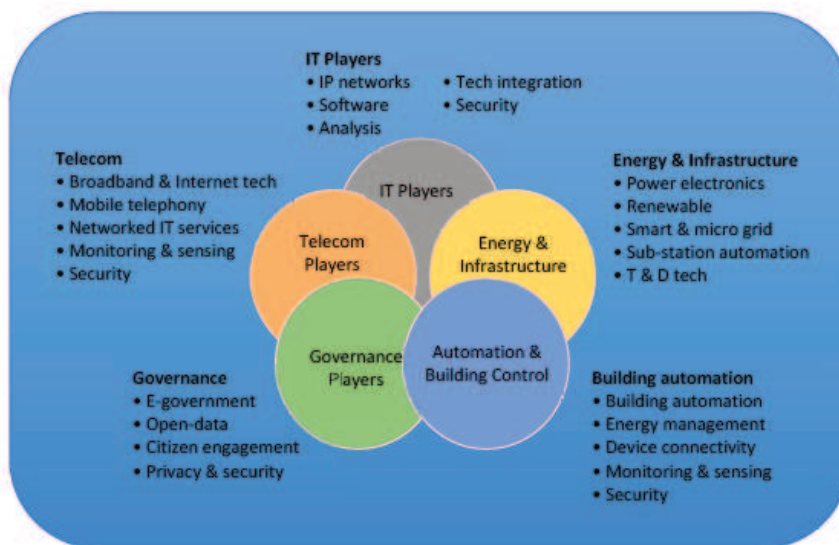

Figure 1. Smart cities as complex ecosystems.

Dia 1. IEEE, Smart Cities As Complex Ecosystems. Source: https://smartcities.ieee.org/articles-publications.html

Dia 2 IEEE: Technological ecosystems, player groups. Source: https://smartcities.ieee.org/articles-publications.html

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[14] Austin Williams. China's Urban Revolution, understanding Chinese eco-cities, 2017, Bloomsbury
[15] Rodger Lea, Smart Cities" An Overview of the Technology Trends Driving Smart Cities, March 2017, IEEE, https://www.ieee.org/publications_standards/publications/periodicals/ieee-smart-cities-trend-paper-2017.pdf

The model shows the concept of 'smart city as complex ecosystems' consisting of three overlapping components: technology aspects (sensing, actuating, networking, data analytics, etc), institutional aspects (urban planning, communities, governance, etc), and human aspects (education and governance, social capital, lifestyle, etc). Neither culture nor environment figure in this concept of the 'smart city market'.

CORP2018 mentions that "sometimes the impression prevails that technology is seen as a self-purpose". The interests of ICT corporations are clearly underpinning the IEEE models. This is usefully related to a geo-political shift from industrial to managerial and currently financial capitalism.[16] It is worth considering that financing has become an inherent part of many global ICT corporations.

The IEEE emphasis lies on technology. The diagram of the 'technological ecosystem in smart cities'[17] shows the key five players: IT, telecom, energy & infrastructure, automation & building control and governance. Human and institutional aspects - assessed in quantitative and qualitative metrics - are seen to assist in creating value for the entire ecosystem in terms of financial values, quality of life, health, education and time.
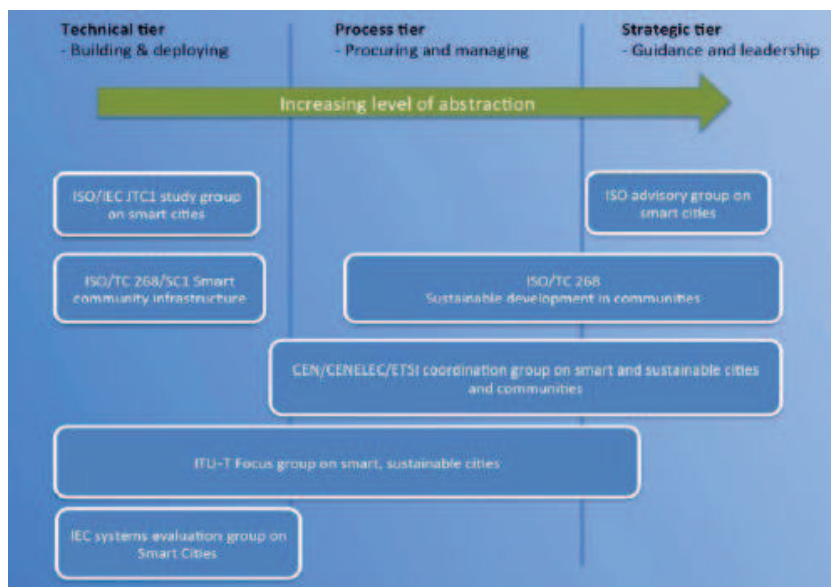
Dia 3 IEEE: Smart Cities: major standards bodies involved. Source: https://smartcities.ieee.org/articles-publications.html

A key issue is standardisation to facilitate interoperability of all these ICTs and data sets collated from a wide variety of sources. Standards are seen to smooth adoption of new technologies and to provide a trusted framework for city authorities and practitioners. Coordination and standard provision are taking place at three levels: strategic, process and technical. Indicators for city services and quality of life are providing guidance to city leadership for strategic sustainable development of communities. Standards for procuring and managing smart city projects and activities are assisting cities in adopting smart city technologies. At the technical level, information technology standards are set for smart city ICT reference frameworks and indicators related to smart city infrastructure needs. The diagram shows the main international standard bodies operating in these three domains.

4 "ARE 'SMART CITIES' THE SOLUTION OR PART OF THE PROBLEM OF CONTINUOUS URBANISATION AROUND THE GLOBE?"

The techno-fix lobby is convinced that electronic management and monitoring of cities will fix all urban dysfunctions and may be able to contain the urbanisation process. In reality, techno-fixes are at best a means to specific ends to improve urban conditions for citizens. Yet, they are often used as tools to achieve other goals, such as surveillance and centralised control of urban activities. The 'smart city' approach builds urban development strategies mainly on techno-fixes, including those emanating from supply side motivations, ranging from sectoral material gains to ideological postulates. No matter how 'smart cities' are defined or

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[16] For a concise account of these structural shift in world economies, see Liem Hoang Ngoc, Les Theories Economiques, petit manuel heterodoxe, 2017, La Dispute
[17] Rodger Lea, Smart Cities", op.cit

what magic ICT toolboxes they are applying, they have not proven to be a panacea for solving all urban problems.

## 4.1 Management of continuous urbanisation beyond smart cities

It may be easy to be mesmerised by the many advanced technologies which are being applied to urban development, but other interventions besides techno-fixes play a part in the control and management of urbanisation. In democratic societies, accountability to the citizenry is key to the development process and the legitimacy of its control. Accountability is rooted in the political decision making apparatus, embedded in turn in institutions which comprise planning. In this context planning is political as it is subjected to the political apparatus empowered to devise planning laws and regulations. Therefore, the issue of managing continuous urbanisation cannot be reduced to the role of 'smart cities'.

Long term strategies of urban change have to address problems beyond short-term techno-fixes, not only because they are taking a long time to implement in a democratic context, but they have to negotiate assumptions regarding the wants and desires of future city dwellers who are notoriously diverse, moreover with changing minds about their livelihood influenced by circumstances mostly outside their control. Holistic solutions for longer term urban futures are a long standing ex ante aspiration of planners. By definition such solutions are impossible to verify against the 'hic-et-nunc' reality. Strategic planning is at best speculative, albeit guided by rational arguments and supported by empirical measures resting on a historic 'evidence base'.

4.2 Techno-fix-less urban growth

Some planning positions omit techno-fixes altogether.

An example is 'The Robust City'.[18] Discarding democratic political realities and institutional constraints it builds on the premise that urban form is more durable than anything else in cities and therefore the best guiding principle of urban development. Inspired by the formal ideas of garden cities, this mainly two dimensional vision of concentric city growth focuses on housing, supports unrestricted use of the private car and proposes large amounts of 'green' areas as reserves for future infrastructure location. However, this techno-fix free alternative is not convincing as a future of sustainable cities.
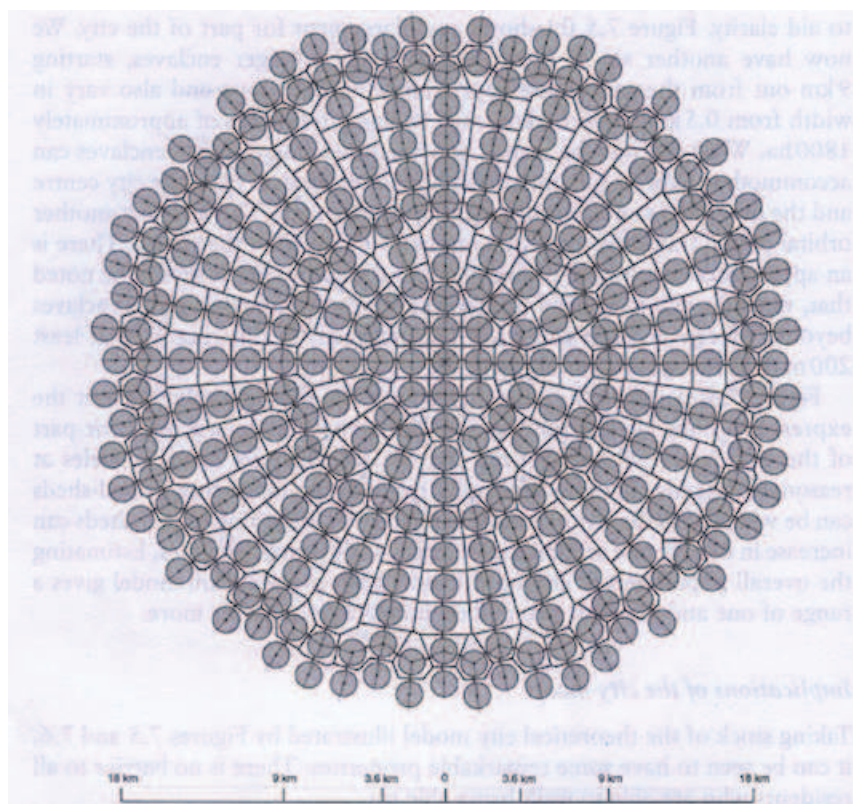
Dia 4 Ideal-type city model based on urban form, designed by Tony Hall in The Robust City, 2017, Routledge

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[18] Tony Hall The Robust City, 2017, Routledge

4.3 Pragmatic view of smart city solutions for ultra-rapid urbanisation

Austin William's position is that contemporary proposals for future urban betterment - techno fixes as well as utopian dreams – have to be mapped or integrated into existing material space-time and evaluated accordingly. His understanding of Chinese eco-cities or smart cities which he does not feel need defining is based on the current stage of China's urban revolution. He acknowledges that sheer economic growth had been underpinning physical urban development until recently. Having reached enormous progress in economic wellbeing of Chinese society and facing structural change with ensuing slow down of this growth, the Chinese have started to incorporate ecological considerations in their urban development strategies. No enthusiast of environmental design his view is that this strategic reorientation is not motivated by environmental concerns but expresses a pragmatic endorsement of global trends towards sustainability to attract inward investment. Even rather insufficient measures against urban air pollution are seen in this perspective.

He reviews a wide range of eco-cities - interchangeable with 'smart cities' - which have recently emerged all over China, how China uses ICTs and other advanced technologies in urban development, and what role global ICT corporations and international design interests are playing. Among the many urban experiments figure also 'failed' attempts at 'smart development'. He acknowledges that the pace and type of such developments conceived to overcome nature was facilitated by a centralised political regime, therefore not easily comparable with sustainable development elsewhere. He embraces the many techno-fixes to which China's urban revolution has resorted and sees them as opportunities for China's future economic expansion based on more R&D and innovative, higher value added products, for example in the field of renewable energy generation.

4.4 Tianjin Eco-city

Dia 5 Tianjin Eco-city vision; source: Tianjin municipal government. http://www.kurzweilai.net/chinese-move-to-their-eco-city-of-the-future

The Sino-Singapore Tianjin Eco-city project conceived as a Low Carbon Living Lab (LCLL) is quite typical for Chinese eco-cities in the way it resorts to techno-fix contributions a self-drive electric car infrastructure functioning in a normal traffic system by GM; a low energy lighting system by Philips; a self emptying rubbish disposal system by Envac Sweden; government buildings collecting rainwater for reuse, being powered by geothermal energy, having window shutters which move with light and being heated with solar energy. Overall Tianjin is expected to derive 28% of energy utilisation from renewable sources40% less energy consumed compared with similar buildings, 30% recycled materials used in building construction. Tianjin gained several 'green' awards.

4.5 "Unprecedented technologies: smart technologies, smart cities"

From these few examples of 'smart urban development' it is not possible to identify which technologies are relevant to urban development, management and sustainability in the short or the long term. Most probably their importance may change over time while further technological innovations are joining them. While 'smart technologies' include monitoring systems, big data, data analytics, sensors, satellites, customer records management systems (CRM), intelligent transportation systems (ITS), ICT monitoring and control instruments for use of utilities, networking and communications, cloud computing, low power WAN technologies, 3/4G, open data made available for free by cities and other public sector agencies and many more. Others are in the pipeline and will also influence urban development, although their impact would have to be monitored, analysed and assessed once they are in use. Among those directly influencing urban life are robotics, artificial intelligence, drones, driverless electric cars, cyber physical systems (CPS), 5G, the Internet of Things (IoT) and edge computing. The frailty of many of these technologies should be kept in mind. A power cut, a network failure, hackers steeling data can jeopardise bring whole systems and bring them to a standstill.

Despite diverse uses of 'smart technologies any holistic view of cities will have to take off from the 'is-state', regardless of how unevenly understood and interpreted it may be. Moreover, it has to rely on incomplete, imperfect and out of date empirical 'facts' on which to build urban change. These constraints provide a temporary real world context for the contributions of 'smart technologies' and how they may help or hinder urban development and sustainable urban living.

5 "WHAT ABOUT PEOPLE LIVING IN THE CITY?"

The techno-fix agencies tend to conceive and use people essentially as sources to advance their smart technologies. They are monitoring their behaviour often without their knowledge and using the observations mainly without their consent as inputs to big data. IEEE[19] concludes that companies capable of tapping into this source of information reap advantage through differentiation.

5.1 Techno-fix notion of citizen engagement

IEEE assesses cities according to commercial criteria whereby comprehensive citizen engagement strategies would establish a closer dialogue between citizens and their cities to reap benefits from citizens and collective wisdom of the urban community. IEEE considers citizen engagement as a complementary aspect of smart cities. However, citizen engagement is equated with the ICT industry's reliance on smart city techno-data gathering and management. Harnessing these technologies provides the opportunity for techno-fix providers to tap into the collective intelligence of cities, and partly understand what citizens (workers, businesses, tourists etc.) do and need in their daily lives in cities. In its overview of technology challenges and enablers of the smart city market IEEE is listing the following innovative tools to communicate with citizens: phone-in reporting possibilities, hackathons, events with developers and crowdsourcing city data from citizens. Alternatively, the EU is promoting co-design and user-centric processes for advanced technology services.[20] IEEE, the EU and other techno-fix promoting agencies believe that such connections between techno-providers and citizens are contributing to citizen empowerment to improve their daily lives.

5.2 Where are the citizens in other planning and development models?

Citizens as active users and contributors to cities do not fair much better in the form based 'The Robust City' scenario evoked above. They figure merely as abstract economic and social forces to make the point that the proposed physical city structure is best able to accommodate the noticeable changes these forces are undergoing over the long term. Citizens in the People's Republic of China are equally insignificant in the civilising mission of the state. In its laudable pursuit of lifting the Chinese population out of poverty also in remote areas the state is resorting to macro-economic strategies with little concern for local impacts and supports techno-fix based practices without seeking user consent.

This paper takes a more humanistic stance and argues that what matters in equal importance with utilitarian survival strategies are subjective, emotional or ideological standpoints as an important part of 'virtual' and

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[19] IEEE: Institute of Electrical and Electronics Engineers, http://smartcities.ieee.org

[20] e.g. European Union's citizen city project, The market place of the European innovation partnership EIP-SCC on smart cities and communities aims to match techno-fix solutions with projects http://ec.europa.eu/eip/smartcities/

non material reality, besides rational 'objective' facts. Urban change fixers who are discarding them may well end up in disappointment, at least in countries where social movements have some clout. The premise here is that urban technologies are only one element of urban change, and behavioural, socio-cultural, economically aspirational dimensions are of equal weight in transforming cities into more liveable, accessible and human-oriented places.

Are people willing to be tied into a 'there-is-no-other-way' techno-fix environment without their say or being labelled off as technophobes? Are there viable 'low-tech' alternatives which are less ephemeral and less resource consuming, with users exercising greater direct control over them? Why should people not have the right to choose an alternative, more sustainable way of life based on the preservation of non-renewable resources and careful use of renewable ones, focused on quality of life rather than accumulation of material goods, convivial urbanity rather than neck-breaking competitiveness? Are cities not about for and about people and their quality of life? Saskia Sassen makes the case for diversity to preserve urban innovation capacity which depends on cohabitation between the powerful and the powerless in a cosmopolitan whole.[21]

Why are there suspicions about the techno-fix world with its supply generated push to consumption, its in-built redundancy philosophy, its practice of creative destruction, its ambiguity between overt and covert agendas, its oligopolistic critical mass, its little transparent power structure, its use of commercial secrecy to protect its links with the political establishment? Why should the only model of urban living rely on binary opposites, either or, instead of and-or? The Chapter on "How to Mobilise Cooperation between 'Top-Down' (techno-neo-liberal economy driven) and 'Bottom-Up' (human and collectivity driven) Urban Change is making the case for synergy between a wide range of approaches to urban regeneration and development which combines techno-fixes with other modus operandi.[22]

There is a lot of frustration among the urban public about their built environment, access to it and mobility through it. Lack of openness, be it between the 'techno-fixers' and the public or the politicians and the citizens is creating mistrust and frustration. Those who choose to move to the margin of urban society are and remain few and far between, but other reactions are rife, such as withdrawal from material into virtual reality of social media and techno-gadget based communication.

6 "HOW TO DESIGN SAFE, LIVEABLE, HEALTHY PLACES TO LIVE?"

Perhaps the first question should be: who is supposed, authorised or legitimised to design (and build and manage) liveable healthy places to live? There are many competing contenders: planners, urban designers, architects, neighbourhood communities, individuals and also the techno-fixers. Due to their position of strength developers, land-owners, financiers demand to have their say as well. This leaves the users, the citizens in a weak position. At best they are able to get hold of a piece of land on which to design and build their own homes. The North Amsterdam experience is such an example, very limited in numbers and scope, although it has produced interesting innovative institutional and realisation solutions rather than design or techno ones.[23] Similar governance and co-design innovations have been developed and applied in Antwerp, while in Brussels area based 'contrats de quartiers' (neighbourhood contracts) were offered to residents to be able to remain in the Canal area also after regeneration.

Perhaps as important as techno-fixes are innovations of governance practices to achieve urban development fit for the 21st century able to satisfy citizen expectations. Urban governance, akin to national governance consists of vertically integrated decision making structures: political or other power-based silos with their self-interests. They may explain the paucity of integrated undertakings, be it in planning, urban policies or anything else claiming to deal with society as a whole. Nevertheless, the complexity of contemporary cities requires some division of labour. The 'is-state' is divided and competitive instead of cooperative and

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[21]http://theconversation.com/investment-in-urban-land-is-on-the-rise-we-need-to-know-who-owns-our-cities-63485, 6 August 2016. Investment in urban land is on the rise – we need to know who owns our cities. Saskia Sassen. The Conversation.

[22] Judith Ryser & Milena Ivkovic (eds). Urban Challenges, an alternative approach. 2018 (forthcoming). Chapter 3 by Judith Ryser, How to Mobilise Cooperation Between 'Top-Down' and 'Bottom-Up' Urban Change? Chapter 1 Resilient and inclusive urban change by Andries Geerse 7& Larissa Guschl.

[23] Isocarp congress 2015, Workshop on alternative development in North Amsterdam curated by the Pakhus de Zweijer NGO. Proceedings CD published by Isocarp. www.isocarp.org

consensus building. The challenge of holistic urban development is how to get from here to there: how holistic aspirations can be democratically corroborated. Governance innovation is just as important for successful inclusive and participatory urban development than any techno-fixes which have clearly their place but need to be integrated into the context of other demands and priorities. Planning has clearly a role to play in this urban dynamic. It is important though to acknowledge the limitations of planning and reconsider to role of planning in a world of rapidly changing technical as well as societal circumstances which are constantly reshaping cities.

Unfortunately, economic concerns, underpinning also the techno-fix industries, are overshadowing the environmental and social dimensions of balanced sustainable urban development. They are not only affecting urban policies but also the monitoring and evaluation methods. This means that the true dysfunctions of such economy dominated policies are hard to come by as they are rarely incorporated at their proper weight in evidence base research. Equally unfortunate is the observation that little seems to be learnt from past mistakes. Neither are ready-made sound bites critically examined and adjusted in the light of patent discrepancies with reality. For example there is no evidence of the constantly advocated trickle down effect of investing in the strongest sectors; quite the reverse it leads to increasing social and spatial polarisation instead.

A spatial example is how urban policies are paying lip-service to the merits of the public realm and its importance in fostering urban life of congregation and conviviality, but tend to give in to speculative pressures. When land and property prices are rising influenced by greater and more intensified use of the city by residents, workers, visitors, but also due to investors, financiers, real estate property owners, landlords, developers are demanding to privatise the public realm and thus reducing public open spaces in the city for all to use freely. Even if they are made accessible in some ways, privatised open spaces are controlled and restricted by private interests and defy the notion of the urban commons.

7 IN LIEU OF CONCLUSION

This paper discussed the role of techno-fixes in urban development and the impact on planning and people. It leads to the following questions:

- What role does techno-fix play in such urban change?

- What role is there for urban planning and how does it relate to techno-fixes in a highly dynamic development culture driven by the neo-liberal economy?

- What urban places will such a symbiosis between reinvented planning and techno-fixes produce and will they be safe, healthy and liveable?

Innovative technology has always contributed to urban development and change and has been a driver for improved liveability. What matters for ICTs and 'smart city' techno-fixes as well as their users is that they are universally accessible and facilitating urban living. This means diverse solutions, including decentralised ones which local communities can run themselves. There are many exciting examples of mobile telephony in remote regions of sub-Saharan Africa. In Europe, the city of Stockholm has installed, owns, manages and rents out a 'grey fibre' network throughout the urban region early on, making communication services accessible to all users geographically and available to all ICT service providers as communication infrastructure.