Smart and eco-cities in India and China

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Smart and eco-cities in India and China

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ABSTRACT

Smart and eco-cities have become important notions for thinking about urban futures. This article contributes to these ongoing debates about smart and eco-urbanism by focussing on recent urbanisation initiatives in Asia. Our study of India's Smart Cities Mission launched under the administration of Narendra Modi and China's All-In-One eco-cities project initiated by Xi Jinping unfolds in two corresponding narratives. Roy and Ong's [2011. *Worlding Cities: Asian Experiments and the Art of Being Global*. Oxford: Wiley-Blackwell] "worlding cities" serves as the theoretical backdrop of our analysis. Based on a careful review of a diverse set of academic literature, policy and other sources we identify five process-dimensions for analysing the respective urban approaches. We show how the specific features of China's and India's urban focus, organisation, implementation, governance and embedding manifest both nations' approaches to smart and eco-urbanism. We argue that India's Smart City Mission and China's All-in-One project are firmly anchored in broader agendas of change that are set out to transform the nation and extend into time. The Indian Smart City Mission is part of a broader ambition to transform the nation enabling her "smart incarnation" in modernity. Smart technologies are seen as the key drivers of change. In China the framework of ecological civilisation continues a 5000-year historical tradition of civilisation excellence. By explicitly linking eco-urbanism to the framework, eco-cities become a means to enact ecological civilisation on the (urban) ground.

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1. Introduction

Cities have always been the sites of aspirations and becoming. The promise of cities is especially luring in the East, where China and India enact their urban ambitions in the context of a drive to shape their identity and future within a global (market) arena. Together, China and India have a population of 2.75 billion people and their populations are expected to continue growing. Currently, 40% of the population in the broader Asian region are below the age of 24 (United Nations – Department of Economic and Social Affairs 2017) and many of these people are striving to live in urban settings, so that projections assume that by 2030 the number of Asian cities with half a million people will increase by 30% (United Nations – Department of Economic and Social Affairs 2016). These dynamics put China's and India's infrastructure, environment and societies under stress. Within these dynamics of a growing population, significant urbanisation trends, economic growth aspirations and the accompanying sustainability challenges, India and China are trying to find answers that will guide

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them on their way through the twenty-first century. In this article we will focus on India and China's recent urbanisation efforts as this offers an entry into exploring their (urban) visions and answers that seem to emerge from them.

Although an established paradigm for both China and India, "urbanisation" quickly headed their political agendas when Xi Jinping and Narendra Modi took office. Equally rapid, both heads of state announced new urban, smart and green initiatives under whose umbrella the individual nation should be transformed and elevated to a new level of civilisation. However, such rapid development raises challenges for social and environmental equity that need addressing, both carefully and complementary (Agyeman, Bullard, and Evans 2003). Especially, as India's "Smart Cities Mission" and China's "All-In-One Project" on eco-city development are not only striving to work on a national level, but are embedded in global economic and geopolitical networks (Roy and Ong 2011). And they eventually respond to questions of global development and climate change, while clearly aiming to place the two countries on the map of a historical "first world".

China's and India's urban initiatives are, thus, embedded in broader debates on global urbanism, which aims to theorise urban–global relations (e.g. Ong and Collier 2005; Brenner and Keil 2006; McFarlane 2010; Roy and Ong 2011; McCann, Roy, and Ward 2013). They also relate to debates on eco-urbanism (e.g. De Jong et al. 2016; Sharifi 2016) in which cities are often framed as sites where consequences of climate change coalesce (Caprotti 2014). Besides the urban–ecological nexus, another stream of scholarship informing this analysis is the smart urbanism debate, in which cities are analysed with a special focus on new technologies and infrastructures (Hollands 2008; Söderström, Paasche, and Klauser 2014; Vanolo 2014; Marvin, Luque-Ayala, and McFarlane 2016).

In this article we will analyse the initiative's of India's Smart Cities Mission and China's All-In-One eco-cities project against the theoretical backdrop of "worlding cities", developed by Roy and Ong (2011). Worlding directs attention "to identify the projects and practices that instantiate some vision of the world in formation" (Ong 2011, 11). By detailing their respective worlding projects we show how "the urban experience" in both India and China becomes "the ongoing result and target of [the countries'] specific worldings" (Ong 2011, 12).

Focussing on China's and India's urban approaches engages them in a comparative relationship. McFarlane (2010) argues that "urbanism has always been conceived comparatively" (725), not least due to the fact that statements about cities are most often derived from implicit comparisons with other cities. Urban studies scholars have long been engaged in methodological-theoretical discussions about the issue of comparison (e.g. Pickvance 1986; Brenner 2001; Robinson 2011). One of the aspects of these diverse and stimulating reflections highlights how cities of the global North have long been unreflectively taken as the default or benchmark for comparisons. As a result, theory production is severely limited "as variables or topics to be considered [are restricted] to those relevant to the privileged locations" (Robinson 2011, 10). Our focus on Chinese and Indian urban efforts contributes to the body of work that extends the range of cases to other geographies.

Another, yet related, topic of critical concern has been the restricted choice of comparative markers, which are often based on generic economic, political and/or territorial categories. Robinson (2011) suggests to use categories of comparison that are not assumed a priori, but carefully developed in relation to the specifics of the research case(s). Many phenomena cannot be captured by the often reductionist use of economic, political and territorial divides. In these cases, she pleads for units of analysis that operate on a different scale or go "beyond the city's physical or territorial extent" (14). Our work is informed by these theoretical–methodological considerations.

In the analysis of India's Smart Cities Mission and China's All-in-One eco-cities project core policy documents, websites and reports from public and private organisations as well as news and media articles have been carefully selected and their content thoroughly analysed. Besides this, we could complement and contextualise the analysis by drawing on our respective extended and ongoing qualitative research work (including field observations and in/formal stakeholder conversations) in both countries. Through inductive coding of these data sources we identified themes which we interpreted using scholarly literature, mainly within the fields of critical urban studies and governance. We

organised these themes under five broad processes relating to the projects' initiation, organisation, implementation, governance and broader embedding. One can find loose similarities of these processes with those employed in standard project management theory and practice (Koskela and Howell 2002; PMI, n.d.).¹ For the purpose of this article they make sense as they provide useful analytical lenses and structural signposts. Theoretically, they are helpful as they operationalise the "project" addition or qualifier in Roy's and Ong's notion of worlding.

Structured under the five process-dimensions we unfold our analysis in two corresponding narratives featuring China's and India's urbanisation efforts. Both, the five processes and their distinctive features help to show how China and India use the Smart Cities Mission and the Eco-City Initiative to operationalise their "worlding" that reaches from basic local development to international outreach.

2. Initiation and focus

In the following section we will provide a brief historical contextualisation of India's and China's urbanisation efforts to show under what characteristics and circumstances the focus has shifted to cities. This embeds both country's most recent urban initiatives.

2.1. From India's villages to her "urban awakening"² in smart cities

To Mahatma Gandhi the cradle of India's awakening was not to be found in the urban space, but was located in her villages. It was here, in the villages of India's vast rural lands where her future and her development emerged. Although Gandhi recognised the importance of urban-industrial economy, his main focus, expressed in his famous *Hind Swaraj* and *Indian Home Rule* publications, remained village development (Spodek 1975). For long, Gandhi's legacy on the role of villages dominated India's political and economic decision-making.

India's decision to liberalise its economy during the 1990s and to establish a market – instead of state-centric economy, was not only underpinned by processes of decentralisation and globalisation but also an increased emphasis on the role of the urban sector in development (Ruparelia, Reddy, and Harriss 2011; Hoelscher 2016). Worldwide, cities were increasingly seen as potent sites for "harnessing urbanization for growth and poverty alleviation" – as the title of an important World Bank report phrased it (The World Bank 2009). Following this thinking the proclamation of "India's urban awakening" did not take long: India's urbanisation potentials were analysed and mapped in a report by McKinsey Global Institute a year later (McKinsey Global Institute 2010). The report underpinned a "market-led approach" to urban development in which efforts in urban transport and infrastructure sectors become key drivers for economic growth (Hoelscher 2016).

The changing focus from villages to cities provides the backdrop for urban development efforts in post-liberalised India. Cities, not villages are seen as the sites in which "development" and "modernisation" are not only kindled but also marketed. Smart cities form the most recent facet of urban development efforts under this approach. According to Hoelscher (2016) the term "smart city" emerged in India in the late 2000s and coincided with "the linking of the private sector and ICT-related [urban] e-governance [as well as the] permeation of the smart city concept in Europe" (32). Similar to Europe, in India, too, the term was soon linked to major transport and infrastructure developments, such as the Industrial Corridors between major Indian cities or the greenfield city projects, of which Dholera or GIFT city are often cited – and contested examples (Datta 2015b). These smart city efforts had been pursued at State level, with Gujarat, Tamil Nadu and Maharashtra as forerunners of States integrating market-led approaches to urban development (Datta 2015b; Hoelscher 2016).

However, it was the in May 2014 newly elected prime minister Narendra Modi of the Bharatya Janata Party (BJP), who tied "smart cities" squarely to India's urban policy agenda at Central level. In June 2015 the new prime minister announced three programmes to tackle urbanisation: "Housing for All",³ AMRUT,⁴ and the "Smart Cities Mission". While Housing for all and AMRUT replace earlier policy programmes, the Smart Cities Mission is a new scheme initiated under the

Modi administration and considered as the new flagship amongst the urbanisation programmes. Under the Smart Cities Mission, which runs from 2015 until 2020, 100 of India's cities are to become smart. With this the Government of India (GOI) aims to tap into the potential of cities as "engines of growth for the economy", expecting that by 2030 40% of India's population will live in urban areas contributing with 75% to the nation's GDP (Ministry of Urban Development – GOI 2015, 5).

2.2. From the countryside to China's eco-city development

China's interest in sustainable and environmentally conscious development is testified since the early 1970s, when the hunger crisis following the Great Leap Forward revealed the limits of its soil (Shapiro 2016). Green urbanisation became a distinct pillar of environmental policy as early as 1973. Institutionally, the overall environmental policy focus was accompanied by the establishment of a national Environmental Protection Office, which was later restructured as the State Environmental Protection Agency and since 2008 acting as the Ministry of Environmental Protection (Baker 2016).

Promoting urbanisation has not always been a priority for Modern China's politics: On the contrary, during the early republic and the Mao era (1949–1978), urbanities were strategically dismantled to break with Ancient traditions, and city people were forcefully relocated to the countryside. This changed poignantly with the launch of a diverse market reforms under Deng Xiaoping, which also encouraged massive urbanisation. By the early 2000s, city development experienced a renaissance within China's overall development efforts. Since then, citizens are politically encouraged to move towards the metropolitan areas along the Yellow Sea coast, especially those of Hebei and Zhejiang province (Liu 2015).

Initiatives from various Chinese government authorities sparked an evolution of city concepts and urbanisation approaches over the last decades, among them smart city initiatives (Yu and Xu 2018). Liu et al. (2014) find that during the 1990s, approaches increasingly foregrounded urban design with "environmental aspects", such as garden city or green city. From the 2000s onwards, more comprehensive umbrella schemes covering several aspects of sustainable development integrated all of these approaches. One prominent concept among them is that of eco-city development, initiated by the Ministry of Environmental Protection. It is the broadest of several Chinese government initiatives to promote eco-city development, addressing a large set of sustainability issues. Two other, yet less comprehensive and smaller approaches are the "low carbon provinces and city program" of the National Development and Reform Committee and the "low carbon eco-city program" of the Ministry of Housing and Urban-Rural Development (De Jong et al. 2016).

3. Organisation

This section will detail specific features that characterise the organisation of India's and China's urban initiatives and show how in both countries political decentralisation plays a central role for organising their urban projects.

3.1. India: competing for becoming smart

One of the core features of the Smart Cities Mission is its competitive approach. In 2015, 100 cities from all over India were shortlisted to take part in a challenge to become a "smart city" under the Smart City Mission policy framework. Municipal officials of these 100 cities were invited to develop smart city plans for their cities and compete with each other to be elected for funding. The competition procedure foresaw several consecutive awarding rounds between 2016 and 2018. Cities with successful proposals could start implementing their plans, while others needed to improve their plans and re-submit for the subsequent of a total of four selection rounds. As highlighted by India's Minister of Urban Development Mr Naidu the Smart Cities Mission "is a landmark in the annals of urban development [in India as] for the first time in the country and perhaps the world, investment in urban development is being made based on the basis of competition" (Naidu 2016).

The competition mechanism on which the Mission is based is noteworthy as it relates to one of Modi's electoral promises to "usher in a new era for Indian federalism" (Arora 2015). The Smart Cities Mission can be seen as Modi's attempt to strengthen the States' role as States and Urban Local Bodies are responsible for developing the Smart Cities Plans according to their own needs and preferences. For the Modi administration this is a move away from the "one-fits-all" approach which had dominated centrally sponsored schemes and which did often not provide a well-suited match between the States' needs and the centrally designed scheme (Sinha 2015).

The devolution of power from India's central level of government to the states has been a lingering issue on India's political agenda (Ruparelia 2015; Sengupta 2015). One of Modi's focal points during his election campaign was to address this and many find that Modi's emphasis on reforming India's governance system along with promoting economic development played a key role for his striking electoral victory at India's central government level in 2014 (Ruparelia 2015).

3.2. China's All-in-One approach for eco-cities

With the election of Xi Jinping as the seventh president of the People's Republic of China, policy efforts soon concentrated on urban development. In one year after Xi took office all eco-urban development became subsumed under the so-called "All-in-One" Pilot Cities" project. This approach is designed as a top-down response to problematic rapid urbanisation. It encompasses a variety of eco-city development projects and serves as an umbrella to green urbanisation. Therein, sustainable (technological) solutions are strongly encouraged and sought for, and corporate investment supported. The action is led by a consortium of National Development and Reform Commission, Ministry of Land Resources, Ministry of Environmental Protection, and Ministry of Housing and Urban-Rural Development (NDRC 2014). It suggests to embrace a comprehensive approach for enforcing regulations, promoting energy-saving and structural adjustments within a frame of poverty alleviation. Encompassing 28 city and county level eco-initiatives, the "All-in-One" project recommends diversity in solving urban environmental problems. One of its core characteristics is the absence of a blueprint model for city development.

This corresponds with an overall trend towards decentralisation (Rong, Jin, and Long 2015). Following the previous Hu regime's directions, Xi continues devolving power to local authorities (Baker 2016). Transferring urban development responsibilities to municipalities suggests these measures are linked to bottom-up reforms. Therefore, green urbanisation shapes political restructuring and adaptation (Sharifi 2016). Decentralisation efforts are interconnected with green economic development, especially through resource efficiency (Baker 2016). Some members of president Xi's cabinet vigorously promote green urbanisation within the realms of main economic priorities (PRCNC 2016). Eco-cities have thus become an integral part of the economic change that aims at replacing the comparatively young, yet carbon-heavy technologies on which the domestic economy relies, with green alternatives (MEP 2016). Promoting localised green economies for eco-city development are characteristic facets of the "All-in-One" approach.

One key organising mechanism in China's eco-city development is the use of indicators to benchmark and assess performance. The Ministry of Environmental Protection was one of the first to develop specific indicators in support of their eco-city development initiative that broadly cover economic and social development as well as environmental protection (De Jong et al. 2016). Based on this, the Ministry accredited hundreds of eco-cities throughout the country, yet there are many initiatives that are being developed by local authorities without official recognition by China's central authorities (De Jong et al. 2016).

4. Implementation

In this section we will show which tensions arise and are incorporated in the implementation of India's and China's urban projects.

4.1. Indian smart cities: from basic infrastructure to smart technologies

The Smart Cities Mission document refrains from defining a smart city as “there is no universally accepted definition [and] even [within] India there is no one way of defining a Smart City” (Ministry of Urban Development – GOI 2015, 5). Despite this definitional openness, one of the dominant facets of “smartness” under the Smart Cities Mission is that it is to be operationalised within the context of basic infrastructure development.

India’s cities, both small and large, struggle with deficits in core infrastructure and service provision, which are, however, significantly more pronounced in small-sized cities with a population of 1 million inhabitants or less (Nandi and Gamkhar 2013). By targeting 100 cities the Smart Cities Mission does not bring India’s well-known urban metropolises of Delhi, Kolkatta or Mumbai, but smaller cities such as Shimoga, Ludhiana or Guwahati and their infrastructural shortcomings into focus. Adequate water supply, assured electricity supply, sanitation and public transport are considered elements of core infrastructure a smart city in India should provide. According to the GOI, such urban infrastructure development can be realised incrementally, by “adding on layers of smartness” (Ministry of Urban Development – GOI 2015, 5).

Smartness is envisioned to be built up in three layers that build on each other (Sharma 2016): after the provision of city-wide core infrastructure, smart solutions are to be applied to improve infrastructure and services, chiefly by adding ICT-based applications (e.g. application of smart meters). Besides city-wide infrastructure development and their ICT-based upgrades, efforts to “smartening” the city also include area-based approaches, which concentrate efforts in certain areas instead of implementing isolated projects throughout the city (Aijaz and Hoelscher 2015). Though retro-fitting (improving existing), re-development (replacing existing) or greenfield development (building new areas) these areas are to become lighthouses and function as models for replication for other areas within the city but also beyond.

Hoelscher (2016) argues that the formulation of the Smart Cities Mission has undergone a “shift in discourse from smart cities as [Special Economic Zones]⁵ that would attract global investment and house the urban elite, to smart cities being more actively framed as inclusive projects within existing cities” (34). Initially, Modi’s narrative when he was still campaigning for becoming prime minister, stressed greenfield developments through building 100 *new* cities. The “Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (LARR) Act”, played an important role in this focus-shift. The Act was issued under the former government and strengthened the rights of the landowners, by requiring consultation procedures of village governments and land owners and stipulating certain compensation and rehabilitation measures (Government of India 2013). Modi’s administration did not succeed in relaxing the Act’s consultation and impact procedures (Hoelscher 2016). As a consequence the Smart City Mission had to be reformulated by including approaches targeting existing (parts of the) cities.

With this, the Smart City Mission incorporates the contested focus of urban development efforts and the resulting tension between providing basic infrastructure and realising smart, i.e. ICT-based, solutions. Resorting to the idea of incrementalism (by adding layers of smartness) is the Mission’s approach to bridge this. Different to smart city developments elsewhere, smartness under the Smart Cities Mission is less related to connotations of green and sustainable urban development. Instead, improving effectiveness and efficiency through IT connectivity and digitisation come to the fore. Not the routine basic infrastructure efforts, but ICT-based solutions and projects implemented in either green- or brownfield development-sites are seen as the pinnacles of the Smart City Mission, as they can function as showcases for and lighthouses of smart urban developments.

4.2. Chinese eco-cities: between public propaganda and failure of delivery

Encouraged and promoted by policy attention, targets and funding, hundreds of eco-city sites have mushroomed across the country (Yu 2014). They are embedded in a public discourse fostering a

variety of developments ranging from an environmental protection law to funding eco-friendly start-ups and technology. Eco-city projects experiment with progressive urban planning and transportation infrastructure, even comply with green architectural standards and alternative energy concepts or smart technology (Hoffmann 2011). In this public discourse eco-cities test sustainable technology and other measures and contribute to redefine Chinese national identity while demarcating itself from others (Wong 2011).

One of the eco-city flagships is Tianjin Eco-city in Hebei province. Starting 2008, Tianjin is a joint-project by the governments of Singapore and China. The city stands on saline-alkaline land and therefore exemplifies both the necessity and possibility to build green cities even on non-arable and water-scarce land (Yu 2014). Through technologically advanced means of urban planning, the Party aims at cleaning up previous environmental damages (PRCNC 2016). Despite positive official propaganda and support, Tianjin Eco-City struggles to fulfil its ecological promises and is not accepted by the targeted young middle-class urbanites (Kaiman 2014). It remains a high-profile ghost town close to Beijing up until today and is not the only negative example (Caprotti, Springer, and Harmer 2015).

The discrepancy of vision and material reality is captured in May Hald's book that provides a sobering view of eco-city development at a location close to Shanghai: "There was nothing even alluding to an eco-city construction at Dongtan site. None of the residents I spoke with on Chongming Island had heard of the eco-city project" (2009, 11). Despite government propaganda and support for green urban development, three main strands of critique on China's eco-cities manifested themselves: misappropriation of funds, detrimental environmental effects and problems of privatisation.

Van Rooij (2006) and Chien (2013) point to the problem of central government funding being soaked up by mid-level provincial and municipal governments. Research on the state and development of Chinese eco-cities describes the effects of illegal administrative practices in distributing public and private funds, and estimates the damage for both governance and public health (Hald 2009). Additionally, many of the eco-city projects struggle with severe problems deriving from their immediate natural environment. Wong (2011) describes the vulnerable ecosystems of eco-cities, as many are built on once-polluted or non-arable land; some even on reclaimed coastal land or artificial coast strips. These sites are literally threatened by underlying environmental hazards such as soil contamination or sea level rise. As elsewhere, China's eco-city development implicates the governance of real estate and the involvement of private corporations. Chinese local authorities can boost their economies by leasing land to private city developers (De Jong et al. 2016). Large corporates involved in developing eco-cities opened room for real-estate speculation (Van Rooij 2006), often accompanied by an aggressive marketing strategy (Joss and Molella 2013). Such speculation arising with what Goldman frames "speculative urbanism" (Goldman 2011) is one of the central objects of debate. Elsewhere, this phenomenon has been reported as well, leading scholars to expressing alarming concerns about lack of social justice (Datta 2015b).

China's eco-city development highlights tensions between official propaganda and perceived failures in actual implementation. The unbroken official support can be interpreted as a cultural trait of avoiding loss of face through admitting failures, especially on international stage. Domestically, such behaviour creates space for further experimentation as it distracts the focus of press and critics.

5. Governance

This section details the characteristics of governing India's and China's urban initiatives and shows which actors and how they are encouraged to participate.

5.1. India's corporate governance of smart cities

The Smart City Mission stipulates that cities implement their smart city plans under the governance of a Special Purpose Vehicle (SPV) that will "plan, appraise, approve, release funds, implement, manage, operate, monitor and evaluate the Smart City development projects" (Ministry of Urban Development

– GOI 2015, 12). The installation of the SPV must be understood against the backdrop of what some call the “decentralisation deficit” in Indian urban governance (Sivaramakrishnan 2007).

Three layers of governance shape Indian governance of the urban sector. The national level, or Centre, has a facilitative role and issues main policies and directions. Federal states are the key responsible actors for urban governance and it is often at this state level where the responsibility for providing basic amenities and services is located. Local urban governments, called “Urban Local Bodies” (ULBs), only have a restricted role and depend heavily on powers and funds devolved from the states (Perret et al. 2014). Though states are responsible they often cannot effectively deliver services at local level. Besides this, the lack of decentralisation by not granting more financial and operational autonomy to the ULB’s contributes to performance and accountability deficits in urban governance (The World Bank 2011).

Though the 74th Constitutional Amendment Act of 1993 has put decentralisation in the urban sector on India’s political agenda, progress is slow and has mainly concentrated on devolving administrative functions to the ULBs, keeping them financially dependent (Nandi and Gamkhar 2013; Perret et al. 2014). Institutional inefficiencies aggravate the lack of decentralisation efforts. “A multitude of administrative bodies and bureaucratic rigidities” contribute to making Indian urban governance complex and inert (Nandi and Gamkhar 2013).

The establishment of a SVP as the governance body to implement the smart city plans is a way to bypass these different institutional and administrative layers and inefficiencies. With the establishment of a SVP direct operational and financial responsibilities are installed at the local level allowing room for manoeuvre and discretion. This is done by establishing a structure with “corporate” governance features. The SVPs that are being formed for the winning cities of the smart city competition are “headed by a full time CEO”, a board of directors and are established in the form of a “Limited Company” under the Companies Act.

The influence of corporate thinking in urban India must be seen against the backdrop of broader patterns of urban development. Since the 1990s along with liberalising her economy the Government of India started to “increase systematically foreign direct investment (FDI) as percentage of the [gross domestic product]” (Ghertner 2014, 1558). This resulted in a massive increase in investments into urban real estate and infrastructure, bringing about a “new planning regime” shifting from “state-run infrastructure to infrastructure that is run and managed by private developers” (Roy 2009, 77).

Pivotal in these liberalised economic dynamics is the acquisition of land. Municipal authorities have been encouraged to liberalise their land markets to facilitate the investment in and development of infrastructure and real-estate projects (Ghertner 2014). Most of these developments are taking place at the outskirts of the cities, where inflows of capital investment contribute to the urbanisation of peri-urban, rural and protected land, “previously used for commoning, subsistence or other purposes not defined primarily by ground-rent maximization” (Ghertner 2014, 1560).

Despite strong corporate influences, enabled through economic liberalisation, the Smart Cities Mission needed to opening up the focus from exclusive greenfield developments to developing existing urban areas. This was accompanied by the move towards “more inclusive language” (Hoelscher 2016, 35). Critiques pointed to the elitist accents of the envisioned smart cities which were mainly in line with aspirations of the urban middle-class. As a consequence the smart cities rhetoric changed and incorporated the importance of citizen participation in decision-making about urban developments: Consultation of citizens forms one of several assessment criteria of the smart city plan that every city participating in the smart city competition has to submit. Besides participating to a certain degree in the formulation of the smart city plans, the Smart Cities Mission states that “the participation of smart people will be enabled by the SPV through increasing use of ICT, especially mobile-based tools” (Ministry of Urban Development – GOI 2015, 18). These elaborations are, however, very broad and unspecific and stand in stark contrast to the level of detail the Mission stipulates for both the type of smart infrastructure solutions to be applied and the way of organising financial and operational governance through SPVs.

5.2. A broader set of stakeholders and social media for China's eco-city development

The promotion of localised approaches for green urban development showcases how Chinese authorities increasingly allow a broader set of stakeholders to engage in their striving towards sustainable development. In recent years China has acknowledged that promoting green development requires a broad engagement of stakeholders, including civil society. And despite keeping a strong hand, with Xi a relaxation of regulations on civic organisations has occurred (Baker 2016). Utilising the internet and social media, such non-governmental organisations publicise environmental information and offer discussion forums (Baker 2016). Social digital media played a crucial role in building up the eco-cities' bad reputation despite the authorities' positive online and offline propaganda. Digital news about eco-city projects, for example, appear on a regular basis. They evoke images of green and liveable environments and form a stark contrast to smog-infested and toxically contaminated urban realities. Despite their supervision, the internet and social media form the central stage for discussing modern urban imaginaries (Caprotti, Springer, and Harmer 2015). Here, "netizens", representing a societal desire of individuality gained through social attention, media presence, and visibility, shape the public opinion. The public debate around the Tianjin Eco-city stands exemplary for the power of social media platforms like Sina Weibo or Tencent's WeChat in expressing discontent and questioning urban development. The critical online discourse reveals these tensions between imaginary and rhetoric as compared to material delivery and eco-promises. It also exposes the struggles between top-down industrialisation and urbanisation on the one hand and community goals on the other.

Besides carefully opening up highly controlled opportunities for public discussion and engagement, the authorities embrace digital communication as a way to enrol people in their green course. China fosters awareness for social responsibility and the importance to adopt green lifestyles predominantly through digital outlets like subway monitors to TV adverts in addition to traditional placards (PRCNC 2016). Both government and netizens employ social media to raising awareness for eco-civilisation, environmental protection, and advocate cultivating green (urban) lifestyles. With new apps, social credit points, and material incentives, government and also private initiatives target individual practices, for example by involving citizens as reporters of environmental pollution (i.e. MEP 2016). These range from encouraging basic habits like not littering to strategic consumer choices as to invest in energy-efficient, smart technology.

6. Embedding

This section, finally, embeds the Indian Smart City Mission and China's "All-in-One" project within broader political dynamics and aspirations.

6.1. Indian smart cities to "transform-nation"

The Smart Cities Mission is implemented in a landscape of other initiatives and efforts in urban development, such as the earlier mentioned Housing for All or AMRUT scheme, but also programmes for fostering entrepreneurship through skills development among the urban poor or initiatives to counter open defaecation and improve solid waste treatment. The Smart Cities Mission emphasises this convergence with other urban schemes as a way to show the embeddedness and complementarity of smart cities efforts with other economic and infrastructure initiatives (Ministry of Urban Development – GOI 2015).

Yet, the Mission can also be seen as part of a broader, overarching narrative. The symbol of India's Smart Cities Mission is a butterfly whose main contours are pictured through "digital-looking" small grey rectangles dotted on a white background. The centre of the two wings and the two tips of the antennas have the green and the orange colour of the Indian flag. The butterfly symbol is subtitled with the lines "Smart City – MISSION TRANSFORM-NATION" (Ministry of Urban Development – GOI,

n.d.). The butterfly stands as a metaphor for the transformation from a crawling caterpillar to a flying butterfly. The sub-title makes this dynamic for India explicit by combining the words “transformation” and “nation” into one hyphenated composite: the nation is transformed through its smart cities.

The promise of “transforming India” accompanied Modi ever since he started campaigning for becoming India’s prime minister. For many, this promise is rooted in the achievements during his tenure as chief minister of the state of Gujarat between 2002 and 2014. During this time he established his Gujarat model of development, emphasising good governance, the importance of an investor-friendly environment and infrastructure development. Though “the primacy of trade and commerce” have a much longer history in this region, Modi could link the economic successes to his style of governance and leadership (Kaur 2015). Following the maxim “minimum government, maximum governance” Modi could establish himself as an action-oriented leader who was able to bring about change by following neoliberals ideas of higher growth rates, capital investment flows and good governance (Kaur 2015). Many voted for Modi in India’s general elections in the hope that his Gujarat model of development would not only bear fruits of economic development for the state of Gujarat but would, when replicated elsewhere, also transform the economy of India as a whole.

Along with his victory, Modi reinforced the stance on economic reforms by his party: Since the second decade of India’s liberalisation the BJP party had increasingly adapted to the neoliberal discourse. This is a remarkable shift as the BJP had long been extremely critically regarding liberalising India’s economy (Ruparelia, Reddy, and Harriss 2011; Kaur 2015). By subscribing to neoliberal ideas the BJP even surpassed the Congress Party – the “original party of economic reforms” – which had facilitated the liberalisation reforms in the 1990s (Kaur 2015). One of the first examples of manifesting the transforming India narrative into India’s governance system was the replacement of the Planning Commission, a 64-year-old policy-making body. Shortly after assuming office the new prime minister announced during his first Independence Day speech to replace the Planning Commission with a new institution with the programmatic name: National Institution for Transforming India, or NITI Aayog.⁶ NITI Aayog is India’s “premier policy think tank, providing both directional and policy inputs” for both Centre and the states (NITI Aayog – GOI, n.d.). Other flagship initiatives for transforming India followed suit. Besides the installation of NITI Aayog and the Smart Cities Mission, Digital India and “Make in India” are two other initiatives that explicitly operationalise Modi’s ambition of transforming India. Digital India envisions “to transform India into a digitally empowered society and knowledge economy” (Ministry of Electronics & Information Technology – GOI, n.d.).⁷ “Make in India” aims to transform India into a global manufacturing hub by facilitating foreign direct investment.

With this the Smart Cities Mission is part of a whole array of efforts launched under Modi to transform India. Since the beginning, Modi tied his transformation-narrative to a neoliberal prefix and the Smart Cities Mission operationalises these transformative ambitions in the urban sector. And while many dimensions of the Smart Cities Mission can be read as a story of unchecked liberalisation, there are (though still very vague) participatory inroads that point to possibilities for countering the dominance of capital-driven urban development India has experienced since the 1990s. The Mission underpins an understanding that transforming India will be done through its cities and in which ICT-based solutions are the primary driver for change. Thereby the Smart Cities Mission plays into what (Datta 2015a) calls “technocratic patriotism”, under which being patriotic is bound to the believe in the power of technology. In the Smart City Mission different Indian aspirations coalesce, involving the transformation of development efforts and their governance – and thus – ultimately – the transformation of the nation. What prefixes will be added, removed or enhanced in this story of transformation remains to be seen.

6.2. China’s eco-city development for ecological civilisation

When President Xi Jinping took office in 2013, the nation committed itself to building an “ecological civilisation” in response to several decades of pollution and deconstruction caused by rapid and often

forceful change. Scholars have increasingly targeted the question of how to revoke the environmental debts acquired during its rapid industrialisation and urbanisation since opening up since 2003 (i.e. Zhu 2004; Muscolino 2009; Li and Liu 2011). By putting ecological civilisation on the agenda, Xi revived a concept that had been lingering in Chinese discourse before. The overarching idea is not only as old as the 1990s (Shen 1994), it picks up a 5000-year historical tradition of civilisation excellence and urban role models. A diplomatic perspective on China's contemporary environmental history attests the 1990s an established national strategy for sustainable development, following the 1980s as a period of basic environmental protection. In the twenty-first century, eco-civilisation offers a long-term strategy vital to further modernisation.

The concept of ecological civilisation is defined to address all issues of the environment comprehensively: industry, traffic, residence, and even the "pattern of society" (Ma 2009). Showcasing China's green motivation, it further tributes to a "scientific outlook on development" that is motivated to par with Western ecological informed sciences (Muscolino 2009) and makes fit for the twenty-first century as "people-centered, fully coordinated, and environmentally sustainable" (UNEP 2016, 3).

Green urban development has become an integral pillar of realising China's ecological civilisation in this strive for modernisation. Eco-cities, thus, feature as a socialist commitment to innovative, coordinated, green, open and shared development (i.e. Liu 2015). The latest economic and social development plan for the Peoples' Republic focusses on urban development, aiming to "develop harmonious and pleasant cities" (PRCNC 2016). Other target areas include gentrification and sanitisation, indicating that growing cities need to address social questions to adhere to sustainable and just standards of urbanisation and development (Moore 2016). President Xi began driving "people-centered green" projects forward right after his election and became the figurehead in promoting green, sustainable urban China.

With Xi, eco-city projects have become a core part of environmental politics which forms one pillar to develop the country's overall ecological civilisation. He revived and underlined the importance of ecological urban development at a time when ecological urban development had come under severe pressure by not delivering on its green promises. By linking eco-city development with ecological civilisation, eco-urban development has become a tangible action to enact and materialise the ambition of creating an ecological civilisation.

7. Conclusion

In this article we have studied India's and China's recent urbanisation efforts in two corresponding narratives. Our aim was not to single out one paradigmatic approach and see how the other matches (or fails to match) this benchmark or role model. Often written in a "rhetoric of superlatives" (McFarlane 2010) these accounts have been criticised for their tendency to reduce findings "to a perfunctory and unenlightening assessment how the others compare to the paradigmatic city" (Beauregard 2003, 190). Rather, through the lens of worlding we identified what Ong describes as "some vision of the world in formation" (Ong 2011, 11). In this concluding section we will summarise and highlight certain findings as they relate and inform the ongoing debate on eco and smart cities in a context of worlding.

In doing so we are informed by McFarlane's (2010) idea of indirect learning. The author cautions against a tendency that reduces learning to an idea of "direct transfer", in which the sole focus is on whether and how it might be useful and applied directly elsewhere (McFarlane 2010). Instead, careful attention to differences can broaden and deepen the spectrum of learning without reverting to pre-defined notions of direct usefulness and transferability. Five analytical dimensions relating to focus, organisation, implementation, governance and embedding have helped us to identify characterising features that describe India's and China's worlding projects in detail. The ensuing section will synthesise these findings. It will show how – despite their differences – both India's and China's urban efforts are firmly anchored in a broader agenda of change that is set out to transform the nation and extend into time.

Both Modi and Xi made urban development one of their political foci when they took office. While in China major urban development efforts are linked with ideas of ecological development, in India urbanisation efforts were soon linked to ideas of smartness and new (Information and Communication) technologies. Xi's support for eco-city development came at a moment when eco-cities were surrounded by an increasingly bad reputation as they did not seem to deliver on their promises. Xi gave a new and fresh impetus to China's ecological urbanisation agenda. A similar dynamic can be seen in India. Linking urbanisation with smartness provided a new flavour and thereby a connotation of a new beginning to the Indian urban sector, which has been struggling for decades with performance deficits and underfunding. It is also in line with Modi's political agenda in which he aims to establish a modern ICT-based image of his leadership.

India organised her smart urbanisation on the basis of a competitive model in form of the Smart City Challenge, in which 100 cities "compete to become smart". This model has parallels with the so-called "100 Resilience City" Challenge, an initiative pioneered by the Rockefeller Foundation (Rockefeller Foundation, n.d.), conducted just one year earlier than Modi's city competition. The similarities can be seen as an example for what Ong terms the "worlding practice of modelling" (Ong 2011). In this case however, no "urban model" (such as eco-city) with "established values understood as desirable and achievable" but a model to organise urbanisation is circulated globally (Ong 2011, 14). In China, the trend towards decentralisation is mirrored in the country's "All-in-One" approach, which does not foresee one blueprint model for urban development. Under the banner of eco-city hundreds of variants of eco-cities have and are being developed to hatch successful models for replication. Their indexing system can be seen as a "modelling technology" for "standard-setting forms and norms" (Ong 2011, 15) that help the implementation of a variety of successful urban innovations and lifestyles elsewhere.

In the implementation of India's urbanisation efforts, the lure of ICT solutions seems to compete with the mundane necessity to provide basic infrastructure, especially for the masses of India's poor (er) urban dwellers. The attractiveness of smart ICT can be seen in its promise as the central driver or even "leap-frogger" for change. And while elsewhere "smart" is quickly linked to connotations of environmental friendliness and forms of greenness, in India smart technologies are first and foremost seen as change-agents for digital connectivity. China's eco-city Tianjin stands as an example for the challenges that emerge when implementing eco-urban ambitions (Caprotti 2014). It exemplifies the tension between public promises and failure of delivery.

The trend of decentralisation in both China's and India's governance arenas suggests a move towards a broader participation of stakeholders. Yet, in the urban context the main addressees of this seem to have been corporate stakeholders. In India this has resulted in the devolution of power to public-private partnerships that govern urbanisation projects. Both in China and in India this put the role of civil society into the centre of attention – and tension. It is remarkable how despite close control by Chinese authorities netizens have emerged as a force that can shape the public discourse on urbanism.

With our analysis we have not only detailed a spectrum of features that characterises China's and India's focus, organisation, implementation and governance of their respective urban efforts. Importantly, the analysis of India's Smart City Mission and China's All-in-One project has shown how both efforts are embedded in broader agendas of change. The Indian Smart City Mission is part of a broader ambition to transform the nation enabling her "smart incarnation" in modernity. The aspiration of reaching modernity is to be realised through embracing smartness manifested in ICT and new technologies, especially as these technologies hold the promise of leapfrogging into the modern state. India's firm belief in the power of technology is also fuelled by her remarkable success as a global IT power house through and with which it entered the world's market stage in the twenty-first century.

China's approach to urban development is integrated within the broader framework of ecological civilisation. Xi revived the framework by explicitly linking eco-urbanism to it as a means to enact ecological civilisation on the (urban) ground. The term "ecological" instead of "environmental" indicates

China's attempt to distinguish itself from other countries in a global race to becoming the greenest nation. In this context, the term "ecological" allows to connect philosophically with traditional Confucian and Taoist values. The former build on rigid rules and emphasise social order, while the latter rely on harmony between human will and nature (Shen 1994). Additionally, an "ecological" framing grants a fresh start into environmental governance. This new terminology tributes to scientific principles and solutions that Beijing utilises in a historicist sense to reconstruct and rejuvenate the nation state's twenty-first-century identity that is torn between communist past and capitalist present.

With India embracing the idea of transformation with smart technologies as key drivers of change and China subscribing to the realisation of an ecological civilisation their cities will be one of the central sites where these aspirations are being enacted and where these same aspirations will be confronted with other (urban) ideas of becoming.

Notes

1. These typically relate to initiating, planning, executing, controlling, and closing.
2. "India's urban awakening" is the title of an influential McKinsey report on Indian urbanisation (McKinsey Global Institute 2010).
3. "Housing for All" is targeted especially at the weaker section of Indian society, and sets out to construct houses in urban areas for 20 million families for the urban poor in the next 7 years.
4. AMRUT or "Atal Mission for Rejuvenation and Urban Transformation" is an infrastructure scheme aiming to provide basic services (e.g. water supply, sewerage, urban transport) to households and build amenities in cities to improve the quality of life.
5. Special Economic Zones are greenfield development projects and enclaves "with the minimum possible regulations (...) to overcome the shortcomings experienced on account of the multiplicity of controls and clearances" and to attract "world-class infrastructure" enabled by "larger foreign investments in India" (Ministry of Commerce and Industry – GOI, n.d.).
6. The abbreviation NITI is also a word play, as it is the Hindi word for "policy". Aayog is Hindi for "commission".
7. Modi's heavily criticized major policy action of demonetizing the 500 and 1000 Rupee banknotes is in line with this ambition. Announced as an effort to counter the shadow economy this initiative must also be seen as an attempt by the Modi administration to advance the "digitization of India", by transforming her into a digitally based economy.

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