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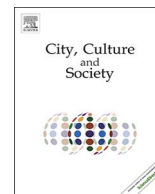
Urban innovation through policy integration: Critical perspectives from 100 smart cities mission in India

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ABSTRACT

Smart cities commentary often highlights the technological and entrepreneurial aspects of the city. But, the dimensions of local policy and politics is surprisingly little debated. Mega cities in the rapidly urbanising economies develop a plethora of urban policies and plans cultivated by various state and local agencies. These are often overlapping or conflicting and as a result do not produce desired outcomes. Prospective smart cities tend to add a new layer of plan and devise extra institutional instrument in to this already complex environment. We challenge this idea of smart cities being another stand-alone initiative and explore how integration of plans and unification of smart city visions with the overarching city development goals can better support effective urban transformation and local innovation. This research addresses the complex planning and governance mechanisms in the world's fastest growing economy – India - which has initiated an ambitious mission to transform 100 urban areas across the country into "smart cities". The federal program involves the provision of centrally devised guidelines for smart city development. These combined with local level policy and institutional initiatives in designated smart cities in India shape a multiplicity of policies and programs. A two-level case study is presented in this paper as a critical polemic on this policy landscape. Investigation along these lines provide opportunities for identification of underlying patterns and challenges of smart city developments in India. The paper concludes with a series of recommendations for building sound smart city policy frameworks in emerging economies.

1. Introduction: why convergence of policies is critical for indian cities

In the year 2015, the Government of India rolled out the 'Smart Cities Mission' with an aim to drive economic growth and improve the quality of life for people in 100 selected cities. Specifically the program aimed to do this by enabling local development and harnessing technology as a means to create smart solutions for citizens (Ministry of Urban Development, 2015a, 2015b). This initiative, although aspiring to execute city wide infrastructure development projects and area based renewal, does not outline how these new proposals will converge with existing master plans and city development plans. As cities are beginning to engage in smart city projects it is becoming apparent that they are looking to implement pilot projects conventionally known as 'sandbox initiatives' (Van Den Bergh & Viaene, 2015), focussing on a narrow scope with high visibility. While experimental sandbox initiatives are useful, these needs to be aligned with the broader city goal if the selected cities are to become 'smart cities'. In this paper we argue against this narrow spatial focus and fragmented investment landscape

(Hollands, 2008) which aims to create infrastructure for a specific area of the city or a particular section of society. We instead investigate how smart city initiatives can make a substantial difference for the whole city, including all its citizens and stakeholders, through comprehensive integration of existing policies and approaches.

Integration of policy frameworks can play a significant role in giving shape to, and transforming, the urban and regional development agenda. In addition the integration of policies across different sectors and different government agencies is of vital importance to stimulating sustainable innovation at the city level (Marceau, 2008; Pinnegar, Marceau, & Randolph, 2008; Redaelli, 2011). Large cities in developing countries are burdened with a plethora of policies and development plans which are often poorly coordinated and have conflicting or overlapping visions, and thus neutral or negative impacts. For example, Bhubaneswar, the capital city of the state of Odisha in Eastern India, which is recognised as the smartest city in the country by Government of India, possesses at least 8 planning documents aimed at development of different urban sectors and infrastructure components. The execution of these plans is undertaken by different agencies at the city and state

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level resulting in complex political mandates. The introduction of the smart city mission in India provides an opportunity to integrate multiple plans and institutions by affirming that "integration in context to smart city is not just for technologies and information systems but for policies" (Johnson, 2008; van Winden, 2008). Van Den Bergh and Viaene rightly pointed out "the smart city is as much about cultural change as it is about adopting technology, formulating strategies, and designing structures" (Van Den Bergh & Viaene, 2015).

The confusion present within the city level policy environment is a consequence of there being no central or unifying strategy for managing urbanisation and development. India, which had 7935 urban centres housing approximately 400 million populations in the year 2011, is yet to develop a country-wide urban development policy. On the contrary, the central governments approach has been sectarian and event based, rolling out schemes and programmes as a firefighting measure without any convergence of the various policies or projects. To better understand ways to transform city level policy and governing mechanisms, this paper critically examines the central government's response in tackling India's urbanisation challenges. A focus on the recent 100 smart cities initiative therefore reveals broader systematic urban policy weaknesses of the central government. This is critical as India's urban development agenda is state driven and cities in the country are highly dependent on higher levels of government for financing and overall guidance for undertaking urban development projects.

2. Background: India's grand urban challenges and sudden emergence of 'smart city' euphoria

According to the United Nations population division, the urban population of the world has grown rapidly since 1950, from 746 million to 3.9 billion in 2014. Asia is home to 53 percent of global urban population, despite its lower level of urbanisation. Both Asia and Africa, are urbanising rapidly and will host nearly 90 percent of the projected 2.5 billion world urban population increase by 2050 (United Nations, 2014). Three emerging economies—India, China and Nigeria— together are expected to account for 37 per cent of the projected growth of the world's urban population between 2014 and 2050 (Porter, 2015). As the world continues to urbanize, sustainable development challenges within cities will intensify, particularly in the emerging middle-income countries where the pace of urbanisation is fastest (World Bank, 2015).

India has observed a dramatic surge of urbanisation over last several decades, taking the urban population share of the country from 17.96% in the year 1961 to 31.16% in the year 2011; and the country is expected to house half of its population in urban areas by the year 2040 (Census of India, 2011). The increasing pace of urbanisation in India has not been matched by adequate planning, sector policies, governance and infrastructure development. As a result, the performance of Indian cities across urban indicators has been sliding well below the desired standards. United Nations placed India at 135th position among 182 countries according to a ranking of the quality of life of its citizens (UNDP, 2014). Similarly in the environmental performance index, India Ranks 155 among 172 countries (Hsu et al., 2014). In 2010, McKinsey & Company rated Indian urban planning, urban finance and urban governance performance as poor; the lowest rating on a four point scale (Sankhe et al., 2010). Within India there is a growing realisation that cities hold the key for the country's future development. For example the Strategic Plan of Ministry of Urban Development, Government of India for 2011–2016 commented that "in order to ensure competitiveness of cities while offering basic services to citizens, urgent steps are required to harness the opportunity that the scale of urbanisation presents and to avoid urban decay" (Ministry of Urban Development, 2015b).

Smart Cities are developed through policies and projects that support urban innovation, and the comprehensive integration of information and communication technology. Although smart city approaches have attracted the attention of the political and professional classes, a critical review of literature indicates that smart cities commentary has a tendency to highlight the technological aspects of a smart city, while its distinct cultural setting, governing and policy issues have not received much attention (Nam & Pardo, 2011). In fact, the system thinking approach aggressively put forward as part of the smart city policy tourism (from global north to south) efforts by technology giants such as IBM and CISCO takes for granted that institutional infrastructures are already in place. This approach fails to consider the context of most cities in the global south (e.g. urban India) where lack of services and unmanaged infrastructure systems is the norm (Gandy, 2004; Söderström, Paasche, & Klauser, 2014). Moreover, such a discourse endorses a mentality where urban planning and development affairs are projected in an apolitical matter. In the IBM's smarter city campaign, urban problems are painted as an outcome of demographic trends, climate change and public finances; but never with organisational culture, fractured policy environments or partisan politics. The disregard of the political economy of Smart Cities is a major shortcoming of current approaches. To ensure smart cities are implemented effectively in India the urban policy landscape and governing political structure must be addressed in a focused way.

With the above background in mind, our research seeks answer to the following questions:

- Does the strategic policy approach adopted by Government of India offer a practical approach for implementing the smart cities mission that is both transformative and efficient?
- How can divergent policies and visions at the city level be assembled into an inclusive and integrated reference framework for smart city development in India?

3. Research methodology: a case study approach to multi-level policy analysis

Analysing urban policy is a complex exercise that requires careful observations and qualitative interpretations. Due to the nature of interconnectedness between horizontal and vertical policy domains and actors, various scientific works recommend a multi stage policy analysis covering different urban sectors and institutions (Mattoni, Gugliermetti, & Bisegna, 2015; Rotmans, Kemp, & Van Asselt, 2001). We also found that the case study approach is popularly employed to deconstruct and critically appraise the effectiveness of urban policy frameworks, especially in the context of smart and digital cities. Authors such as Bakici have adopted city level case study models for investigating smart city policy mechanisms to reveal benefits and challenges of smart city developments (Bakici, Almirall, & Wareham, 2013). In contrast Alizadeh favoured a two way approach while investigating urban digital strategies covering both national and local policy agendas (Alizadeh, 2015).

In analysing policy and governing frameworks concerning urban development and specifically smart cities this research combines the two above approaches. A two stage case study reviews both 1.) the central government level and then 2.) the municipal level. The first case is the 'Smart Cities Mission' initiated by Ministry of Urban Development, Government of India. We investigated this initiative as the primary objective of this research was to decode the overall strategic outline of the central government looking to spearhead development of 100 smart cities. As part of this assessment we critically reviewed major policy documents prepared by Government of India over the last decade with special emphasis on Smart Cities Mission Statement & Guidelines. We support our observations by citing multiple literature which commented on contemporary urban scenarios in India and its preparedness to undertake transformative smart cities projects. The second stage of analysis was focused on building a comprehensive understanding of the local level urban planning, policy and institutional capacity in Indian cities through reference to Bhubaneswar city. The city was selected considering its elevation as the smartest city in the