Smart Cities and Their Roles in City Competition: A Classification

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ABSTRACT

Traditional competition between cities appears to transit to a “smart” competition and to this end smart city ownership, organization and evolution are questioned. In this paper, a worldwide smart city classification is performed in order to address the preferred organization and the technological evolution of smart city. This classification’s findings illustrate that State-Owned-Enterprise appears to be the preferred organization in most of the examined cases, while smart cities struggle in a niche international market arena.

Keywords: Business/Government Interaction and Relations, Business Systems, Economic Geography, Management of Technology, Smart City

INTRODUCTION

Governments worldwide have created several State Owned Enterprises (SOEs) in order to serve public functions, to capitalize national economic and natural resources of strategic interest or even to support economic growth (Dewenter & Malatesta, 1997; U.S. General Accounting Office, 1988). Various analyses (Andrés et al., 2011; Netter & Megginson, 2001) depict that Governments encourage SOEs’ privatization, especially for market linearization and for debt losses’ control. Moreover, the same studies illustrate that the remaining SOEs deal with traditional economic activities and social services (European Commission, 2004) or with resources’ management of public interest (i.e., water and electricity supply, oil drilling and mineral mining, public transportation etc.).

Further to the above, States induct SOEs for new markets’ creation since it holds the power to support national and regional economic growth via framework programs and public projects. In Brazil (Trebat, 1983) and Greece (Lioukas et al., 1993) for instance, SOEs have initiated alternative energy production and/or telecommunication markets, while in Post-Soviet States (Bilsen & Konings, 1998) and China (Mako & Zhang, 2003) SOEs have developed and controlled the entire market before or until their transition. In this context, public investments migrate to private control by their planning (in Public Private Partnerships (PPP)) or after they close their initial life-cycles.

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The topic of this paper concerns the smart cities, which is a quite confusing domain since it has been used by alternative scholars to address multiple urban challenges varying from the “smartness footprint” in a city that can be measured by a set of indexes (Giffinger et al., 2007); to smart energy consumption, transportation and other hard asset management (Neirotti et al., 2014); and to the application of the Information and Communications Technologies (ICT) and the deployment of various e-services in urban areas (Anthopoulos & Vakali, 2012). This last definition will be considered to describe the smart city term for the rest of this paper.

Smart cities suggest a crucial topic because, they deal with important state-of-the-art notions i.e., e-Government service delivery, e-service adoption, social aspects and social networking, wide areas of practice for technological evolution etc. However, it has gained an extensive international attention due to the niche smart city market that has been established, where geopolitical competition is transferred. Furthermore, the traditional competition between cities—that goes beyond the national boundaries—appears to move progressively to the smart domain, where urban agglomerations utilize innovation and ICT to attract residents, visitors and investments (Malecki, 2013). This paper aims to contribute to this research gap with regard to the existence of international smart city competition and questions smart city ownership and management. To this end, this paper considers a niche organization that owns and manages the smart city, while it defines the terms and the means with which the city struggles in this international smart competition. This organization can potentially have various forms such as, SOE; project coalition; private organization; Non-Governmental-Organization (NGO); and a municipal agency. This paper addresses the preferred organization structure of smart cities and tries to answer the following two research questions: “is the preferred organization structure of smart cities SOE?” and “is the smart city SOE a vehicle for international expansion, national trading and competition?”

These two questions are very important to be answered for both the domains of smart cities and SOEs because, they request the determination of the organizational structures and the business models that smart cities adopt in order to sustain and compete in the international arena. In case that the preferred organizational structure will be confirmed to be a SOE, new areas for scientific study rise: smart cities beyond their technological interest comprise an extensive and emerging market accounting more than U.S. $240 billion (Korea IT Times, 2012), while they’ve become living labs and means that attract investments and sell products and expertise.

The first research question could be considered as simple and trivial, since the smart cities are the result of public investments (programmes or projects), which are developed for relevant to Government Owned Enterprises’ specific purposes—such as to assert economic growth—and belong to the State or to a Municipality until their potential privatization after the close of their initial life-cycles. The deliverables of these interventions are controlled by organizations, which either exist (i.e., Municipalities) or they are legally grounded for the purposes of each case. Smart cities that are publicly funded and municipally managed can be considered SOEs, since many locally administered SOEs exist (Mako & Zhang, 2003) and enjoy “localization of benefits” (i.e., wages). A known smart city SOE is Kingston Communications (www.kc.co.uk), which operates under the municipality of Hull (UK). Kingston Communications offers telecommunication services on behalf of the smart city of Hull, while it represents a business model of selling telecommunication services. However, no particular study has been performed so far that considers smart cities from the SOE perspective or classifies smart cities or demonstrate their organization and business cases.

The second research question is more challenging and rises from the cases of New Songdo (South Korea) and Dubai (United Arab Emirates). New Songdo ubiquitous city has been evolved as a coalition of international interests and its viability mostly depends on foreigners’ residential and on real estate capitalization (Lee & Oh, 2008). Dubai Internet City (www.
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