

# Chapter 11

## Cross–Sector Partnership in Smart City Development: The Case of Brazil

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### ABSTRACT

*Urbanization is a persistent phenomenon. As cities have expanded, so has the demand for government ability to provide better infrastructure and public services. The “smart city” concept may form a response to these urban challenges. From a business point of view, incorporating digital technologies to address some of the city’s sustainability challenges is a means to create business opportunities for firms. However, a smart city project is complex, and it requires firms interaction with government and civil society. Hence, the aim of this chapter is to understand how firms manage their relationships with socio-political actors in projects for smart city development and how socio-political actors can be a source of competitive advantage. These questions will be answered by applying business network perspective within cross-sector partnership in the context of firms operating in Brazil. The study contributes to a foundation for a better discussion among policy makers and practitioners about promoting inter-organizational cooperation in projects with a social purpose.*

### INTRODUCTION

Urbanization is a persistent phenomenon and its impact is evident in today’s society and in the environment. With more people living in urban areas, streets become congested, environmental degradation levels have increased and public health may decline (UN, 2014). As cities have expanded, so has the demand for government capacity to provide better cities’ infrastructure and public services. The increasing trajectory of urban population is not only an interesting fact but it urges the need to make cities sustainable. With regards to sustainability - a main UN goal - cities and urban population merit attention. The ‘smart city’ concept may form a response to these urban challenges.

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A city is defined as ‘smart’ when the government participates in the efficient distribution of resources aligned with economic development (Caragliu, Del Bo & Nijkamp, 2011). The term has also been used to refer to the integration of public and private services using technological innovation, which typically involves ICT (information and communications technology). Although there is no prevalent or universally acknowledged definition of ‘smart city, its goal ‘is to better allocate public resources, increase the quality of services offered to citizens while reducing the operational costs of the public administration’ (Zanella Bui, Castellani & Vangelista, 2014) and therefore public authorities are the potential buyers of such technologies. This objective for making cities smart can be pursued by the development of IoT (Internet of Things) based services, which integrate several technologies and communication infrastructures via the internet. Such technologies facilitate remote monitoring, the management and optimization of traditional public services such as – but not limited to - transport and parking, public street lighting, education, etc. (Atzori, Iera, & Morabito, 2010). Furthermore, these technological solutions can also combine data from several connected devices and, therefore, help public authorities to improve their decision-making through data analysis.

From a business point of view, incorporating digital technologies to address some of the city’s sustainability challenges is a way of creating business opportunities. However, the development and implementation of technologies applied to cities require companies to interact with a range of actors outside their traditional business network. In this study the central concern is on companies that are considered to be embedded in relationships containing both business and nonbusiness actors. Firms’ relationship with nonbusiness actors refers to other stakeholders beyond the traditional business network of customers, suppliers, and competitors. In this study, ‘social’ refers to nongovernmental organizations (NGOs) while ‘political’ refers to public officials and politicians. In such relationships, companies and socio-political actors may benefit from each other if they perceive possibilities for achieving common goals.

When examining development of products and services, literature within business research commonly focuses on companies and their performance in relation to short-term and incremental aspects of innovation, while little attention has been paid to public-private benefits (Bhanji & Oxley, 2013; Mahoney, McGahan, & Pitelis, 2009). Such relationship development becomes even more relevant in a market for smart city technologies, in which nonbusiness actors are the potential buyers and system users. I argue that there is a need to learn more about how firms cope with the inherent complexity in such relationships where actors with different values and limited resources attempt to find novel smart city solutions. Based on that, the aim of this chapter is twofold: 1) to understand how firms manage their relationships with socio-political actors in projects for smart city development and 2) how socio-political actors can be a source of competitive advantage. These questions will be answered by applying business network perspective in the context of firms operating in Brazil.

An interesting aspect is that the dominant literature studying smart cities focuses specifically on technology and its infrastructure (Andersson & Mattsson, 2015), and there is a lack of academic inquiries analyzing these suppliers’ business relationships and network formation. As mentioned above, particular focus is made in this chapter is on the role of the socio-political actors on the firms’ business activities linked with the smart city projects. Therefore, the investigation of the influence of these actors on the firms’ cooperative behavior as well as what kind of solution can be achieved, needs to be further studied. Investigating cross-sector cooperation within smart city development and implementation may help broaden business-to-business research and industrial business network.

Following this introduction of the chapter, next section provides theoretical background regarding cross-sector cooperation. In addition to that, challenges and opportunities faced by companies in such

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