Public-private partnerships for smart cities: sharing good practices

By mid-century, more than two out of every three people are expected to live in cities. To accommodate urban growth in smarter, more sustainable cities, experts look to public-private partnerships (PPPs) — as seen in successful cases from Cairo to Barcelona.

September 1, 2017

IESE's Public-Private Sector Research Center and **PPP for Cities**, IESE's Specialist Center on PPP in Smart and Sustainable Cities, are producing a series of studies, with the support of the United Nations Economic Commission for Europe and its International PPP Centre of Excellence.

The goal is to create guides to good practices and standards that help companies and public administrations around the world organize, manage, develop and design solutions to the major issues they face, using public-private partnerships (PPPs).

The following studies are currently available and free to download by following the links below:

New Cairo wastewater treatment plant (Egypt)

By Jordi Salvador, Francesc Trillas, Joan E. Ricart & Miquel Rodríguez Planas, in collaboration with FCC Aqualia and Ineco

In Egypt, freshwater — a vital resource already in short supply for drinking — was wastefully being used for irrigating agricultural and urban green areas. The government knew something had to be done, but public funds were tight, and it had limited experience in enlisting the private sector to develop solutions.

After adopting PPP legislation, the government invited companies to tender for building a wastewater treatment plant (pictured), which could both generate water for irrigation and limit the amount of polluted water being dumped in the Nile.

This study explains how they did it, starting from scratch and eventually leading to one of the shareholders — FCC Aqualia — earning international recognition for its prosocial PPP model.

Barcelona GIX: IT network integration (Spain)

By Jordi Salvador, Joan E. Ricart, Francesc Trillas & Miquel Rodríguez Planas, in collaboration with Barcelona City Council (Ajuntament de Barcelona)

5G, the Internet of Things, connected cars: the next generation of technological innovation affords untold opportunities for cities to upgrade their offerings, maximizing the use of spare capacity as well as commercializing network capacity among market operators. But how?

This study examines how Barcelona City Council used a PPP to accelerate the integration, expansion and evolution of the city's IT networks, while obtaining better, more secure, customized IT services in the process.

Municipal IT infrastructure and networks used to be managed separately under different external contracts. The new arrangement — known as Barcelona GIX (Gestió Integrada de les Xarxes municipals, in Catalan) — operates under a single contract and features integrated management that streamlines costs and generates greater efficiencies and innovation.

Beach maintenance in Barcelona's Metropolitan Area (Spain)

By Jordi Salvador, Joan E. Ricart, Xavier Fageda & Miquel Rodríguez Planas, in collaboration with the Metropolitan Area of Barcelona (AMB)

Cleaning the sand, collecting trash and maintaining public furniture such as benches, playgrounds, sports facilities, showers and walkways for 42 kilometers of coastline is certainly no day at the beach! This is the monthly challenge faced by various municipalities falling within the Metropolitan Area of Barcelona (AMB).

This study analyzes the maintenance contracts that were put together, the tender process, the internal characteristics of the PPP (including financing and governance) as well as the external characteristics (the political, legal and environmental conditions). The impact on local residents is also assessed.

Of particular interest is the use of separate contracts: one for furniture maintenance and one for sand cleaning. The ins and outs of contracting tasks separately versus jointly is discussed. Although doing things together would seem to make the most sense for reasons of efficiency, the reality of having to share expenses among different administrations adds a layer of difficulty. This problem — where common expenses have to be shared among different councils — will be familiar to many authorities.

Comprehensive maintenance of the Barcelona ring roads (Spain)

By Hugo Ferradans, Joan E. Ricart, Francesc Trillas & Miquel Rodríguez Planas, in collaboration with the Metropolitan Area of Barcelona (AMB)

Most major metropolises have a ring road — a major highway that loops around the city to reduce congestion in the center while providing key points of entry and exit. But roads to solve one problem (regulating traffic flows) entail other issues of maintenance: cleaning and pruning, surveillance cameras, not to mention conservation of the road infrastructure itself.

Maintenance of Barcelona's ring roads was awarded to concessionaires through public contracts. This study uses the occasion of the next public tender for the period 2017-2021 to analyze the delivery of this service via a public-private partnership.

This PPP highlights: the legal framework; the use of an independent company; incentives for innovation; risk-mitigation mechanisms; the creation of contracting bodies; and the partial transfer of risks, such as inflation, to the private company.

Barcelona Tram service (Spain)

By Josep Navarro, Joan Enric Ricart, Francesc Trillas, Miquel Rodríguez Planas & Jordi Salvador, in collaboration with Barcelona's Autoritat del Transport Metropolità (ATM)

Barcelona's historical tram network, which served the city for almost a century, was scrapped in 1971. But then, by the end of the 1980s, transportation policy makers felt that trams should be reintroduced.

The project to build a tram line along Avinguda Diagonal (which cuts Barcelona in two diagonally, hence the name) was conceived as a PPP between the regional Catalan government and local transportation authorities.

This study looks at the overall success of the PPP project in terms of its cost effectiveness, risk sharing and ridership levels — as well as some of its challenges, pointing to considerations for running a similarly scaled project in the future.

Barcelona telecare program (Spain)

Josep Navarro, Miquel Rodríguez Planas, Francesc Trillas, Joan Enric Ricart & Jordi Salvador, with the collaboration of Ajuntament de Barcelona

The Barcelona City Council telecare program was set up in 2013 to replace the state program developed by the Imserso, which was being phased out. The initial objective was to improve the living standards of elderly people by reducing delays in getting them help. However, an unexpected externality appeared: users' mental health improved thanks to the sense of safety that telecare gave them.

Barcelona's telecare system provides users with two communication devices. There's a landline phone device with which, at the press of a button, users can call the telecare service headquarters directly. They also have a remote control unit to activate the landline device to call the telecare service headquarters for a prompt, suitable response.

El Realito aqueduct (Mexico)

By Jordi Salvador, Joan Enric Ricart, Francesc Trillas & Miquel Rodríguez, in

collaboration with Aqualia

The El Realito aqueduct was designed for purifying water and channeling it from its namesake dam to the metropolitan area of San Luis Potosí, Mexico. This aqueduct was built to counteract the overexploitation of aquifers (up to that point, the source of up to 90 percent of the water consumed in the area) and mitigate related risks.

The project is structured as a PPP in which the payment to the concessionaire and the banks is made through trusts — a system of contracts that helps hedge against risks and consequently reduces project costs.

READ ALSO: All about cooperation, collaboration and partnerships

*Visit the **IESE PPP for Cities** webpage for more case studies and other resources.*

www.iese.edu/insight