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Innovative approaches to implement road infrastructure concession through Public-Private Partnership (PPP) initiatives: a case study

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Abstract

During recent decades, major public road authorities showed an increasing trend in seeking for alternative ways to establish and implement road infrastructures concession systems, with the main aim to make it doable in a reliable, socio-economically sustainable and cost effective manner.

This phenomenon is mainly due to increasingly higher risks related to the establishment of road concession system and risk related to the introduction of road toll payment requirements.

During the last three years, ANAS International Enterprise S.p.A., a subsidiary company of the Italian Highway Agency ANAS S.p.A., has been appointed for assessing the feasibility and comprehensively structuring road concessions, through the implementation of a Public-Private Partnership (PPP) initiative, for a large part of road network of the Republic of Colombia.

The main activities consisted in (i) the development of a financial model, consistent with the rules and economic parameters related to the Colombian market; (ii) the assessment of the economic and financial feasibility; (iii) carrying out studies and simulations for several concessions scenarios implementation, including analysis of risks and technical, financial and legal assessment; (iv) preparation of tender documentation and delivery of technical support to the National Infrastructure Agency during the public-private partnership awarding process.

Along with these activities, the implementation of an innovative road concession system allowed the transfer and application of a number of best practices in various sectors. Indeed, improvement on the following aspects have been achieved:

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- *Innovations in construction*, including alternative solutions for road embankment slope stabilization; barriers against rock falls; asphalt concrete mixtures modified with polymers;
- *Technological innovations*, including intelligent transport systems, telecommunications and information infrastructure, subsystem tolls, transport operating centers, subsystem video surveillance cameras hotspots, emergency call subsystem, weighing subsystem, lighting systems in urban areas and tolls;
- *Innovations in financial structuring*, including tailor-made regulating financial planning and monitoring tools, introduction of innovative solutions for the use of appropriate discount rates aimed to ensure investor profitability, assessment tool to manage public- and private-sides risks, assessing tools to ensure value for money, implementation of alternative solutions for public participation in Project Financing initiatives, development and implementation of alternative solutions for private funding in the financing process (including structuring infrastructure bonds), adoption of PPP structure type contracts provisions;

In this paper, the Authors describe in detail the concession implementation process, by particularly focusing on criteria adopted in selecting the contract type and related aspects, and highlighting main criticalities identified throughout the concession setting up process.

Aiming to give food for thought for further development of road infrastructure concession practice implementation, this paper aims to provide the Reader with an analysis of an actual successful case study and accurate and well-balanced comments on advantages, disadvantages and criticalities faced.

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1. Alternatives for road infrastructure concessions

In the PPP acronym the most important P is the third one: Partnership. It is the meaning we want to give to this Partnership and the equilibrium of the sharing of the burdens and responsibilities in between the Public and the Private the key of success of such initiatives.

This has also been the lesson learned in Colombia, where ANAS has been awarded of two contracts for the comprehensively structuring of totally around 3,000 km of roads, divided in 9 lots, of the fourth generation of concessions, the so called 4G highway program, after first, second and third generation failed precisely for the lack of balance. In fact in the first generation all risks were borne by the public, ending to be much more costly for the government. In the second generation the situation has been inverted, with the result that private have either failed or fled the contracts. In the third one a better equilibrium has been found, but still lack of clear rules ended up creating delays, low levels of services and reclamations.

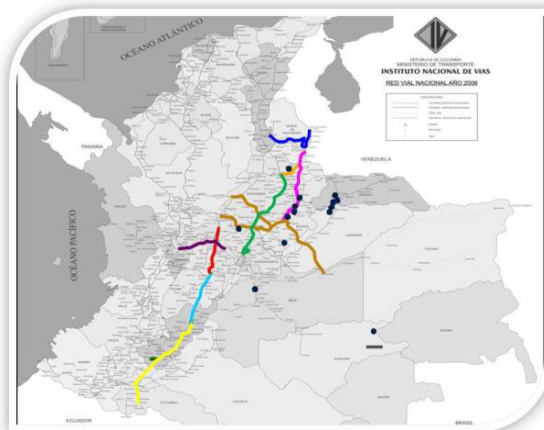


Fig. 1. Map of road concessions structured by ANS in Colombia.

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