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The evaluation of road infrastructure development projects

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Abstract

The evaluation of road infrastructure development projects is an important stage in the development process, as it makes it possible to check upon completion whether the designed infrastructure meets the objectives originally set for it. Since this stage is too often poorly known and forgotten, the Belgian Road Research Centre has developed an evaluation methodology for use by the Brussels Mobility department of the Brussels Capital Region. This methodology was applied to a number of major road infrastructure projects and yielded detailed information on the quality of the developed infrastructure and on any improvements to be made to it in order to meet its pre-set objectives as closely as possible.

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1. Introduction

Whereas the long and complex process involved in any development project, from preliminary design to the final acceptance of works, is well-established in the habits and practice of road design and construction, the ex-post evaluation process is poorly known and generally forgotten. Now it is of primary importance to evaluate upon completion whether the developed infrastructure does meet the objectives it was originally designed for. It is also

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important, through this evaluation, to draw both positive and negative lessons from completed projects, so as to better guide the choice of measures to be recommended in future and to meet the objections that may be raised in the field by various actors such as roadside residents, traders, and representatives of various associations and organizations. With respect to these objections, clear communication to provide an objective basis for discussion would, under certain circumstances, help to avoid excessive delays in the development process.

Given the fact that few road infrastructure projects implemented in the Brussels Capital Region are actually evaluated, the Belgian Road Research Centre (BRRC) has developed, at the request of the Strategy Directorate of the Brussels Mobility department, a general evaluation process methodology that can be applied to any road infrastructure project. This process was used between 2011 and 2013 to evaluate three major road infrastructure redevelopment projects in Brussels before works: the Avenue du Port, the Avenue Woeste and the Chaussée de Waterloo (section Legrand-Churchill).

Since it was presented at the Transport Research Arena conference in Paris 2014, the process has gone through some major developments. Whereas in 2014 only ex-ante evaluations were available, a full evaluation of an infrastructure redevelopment project was completed in 2015. The main conclusions from this evaluation are presented in this paper. On the other hand, the application of the process in the field proved rather complex because of the wide variety of data items to be collected. To remedy this, BRRC has been developing since September 2015 a georeferenced computer-based system for collecting data on problems found on site. This system will be presented in detail in the second part of this paper.

2. Prerequisites for the development of the process methodology

The evaluation process was developed while meeting a number of prerequisites set from the beginning by the Brussels Capital Region:

- the evaluation process should not be too constraining: it is important that it can be completed within a reasonable lapse of time. In view of the many stages involved in infrastructure projects, it is, indeed, important that this new stage, which is to become general practice in future, should not constitute an additional constraint that would make the procedures even more tedious. This lapse of time, and the consequent cost, will of course depend on the magnitude of the project, but also on the availability and, therefore, sometimes the collection of the data required for the evaluation, as well as on the various objectives to be met by the infrastructure;
- the evaluation tool to be developed does not aim to evaluate the choices made by the manager as to the choice of type of road infrastructure to be provided (e.g., development of a one-way or a two-way cycle track), but rather to investigate the infrastructure as determined by the manager so as to verify its compliance with the various development principles governing any road infrastructure project;
- the tool should be capable of evaluating infrastructure projects, not mobility projects. Although the aspects directly related to mobility (traffic flows, commercial speed, accidents, etc.) must not be overlooked, the items to be evaluated are mainly infrastructural. In concrete terms, for example as far as public transit is concerned the evaluation should bear on the quality of bus stop facilities (size, equipment, pavement condition) rather than on passenger statistics or commercial speeds on the various bus lines;
- the tool should be seen as a help to the manager and the project designer, which does not relieve them of their tasks in any way. Common sense should prevail.

This evaluation tool could also be used in other regions and/or municipalities in Belgium and even abroad – with certain adaptations, since the objectives of development projects will not necessarily be same as in the Brussels Capital Region.

3. Evaluation methodology for road infrastructure projects

The basic principle for the evaluation process is represented in the diagram of Figure 1. It applies to any development project carried out in the Brussels Capital Region and is centred on the fact that any project is systematically evaluated for compliance with several pre-set objectives (W. Debauche et al., 2006).

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