

In-car traffic management services

Amsterdam Practical Trial (APT)

About this Best Practice Case

Main learning aspect is how Rijkswaterstaat used a Design contest to create a Practical Trial in Amsterdam. A sub-goal was to learn as much as possible about the set-up of the tests, about the cooperation between market and government and about the behaviour of the users.

Title: In-car traffic management services
Cluster Topic: Intelligent Transport Systems
Country: The Netherlands
Procuring Authority: Rijkswaterstaat
Procedure: Design Contest
Directive used: 2004/18/EC

Procurement of in-car traffic management services – Netherlands

Key points

- Aim of this project was to influence road users' behaviour via in-car devices. This can reduce traffic congestion and increase traffic safety.
- Aim was to develop and evaluate services that would be introduced on the market during the project and would continue operational after the project.
- The private service providers provided via in-car devices individualized traffic information and traffic management services.
- A sub-goal was to learn as much as possible about the set-up of the tests, about the cooperation between market and government and about the behaviour of the users.
- From theory and design to an operational app for in-car solutions and traffic management.
- Large scale tests were done; in regular commuter traffic and in traffic during major events.
- Four contracts were signed with two consortia in parallel.

The Procurement Objectives

Brief description

PPA In-car was a sub-project within the Amsterdam Practical Trial (APT) project. Requested were pre-commercial developments followed by several large-scale trials in the Amsterdam Region with the purpose to introduce in-car services on the market during the project that would remain operational after the project. As selection method, Rijkswaterstaat used a contest as a first step. The 5 best scoring suppliers were then asked to compete in a competitive dialogue for a large scale practical trial. Aim of the trial was to influence public road users' behaviour with in-car devices in order to reduce traffic congestion and to improve traffic safety. The large-scale trials aimed for daily users (at least 6,000 participants) and for event visitors (at least 1,000) in the Amsterdam area. Contractors had to find and accommodate road users and keep them as customers for at least six months. Parties were asked to offer solutions with regards to technical possibilities, effects on traffic management, behaviour, evaluation and management. The total budget available was about 12 million euros. There were in total four contracts: two contracts for tests in regular traffic and two contracts for tests in traffic around major events. Two consortia were contracted in parallel with identical contracts; each with a contract for regular traffic and one for event traffic. The supervision from Rijkswaterstaat was limited to mainly progress monitoring and risk management. This offered the consortia much freedom to develop their own solutions within the boundaries of the contract. The consortia were also responsible to evaluate their own tests.

Reasons for this to procurement

In 2012 in-car traffic information services existed, but in-car traffic management services not (yet). With these contracts Rijkswaterstaat aimed to stimulate the development of in-car traffic management services, to evaluate them at large-scale and to stimulate a market introduction during or after the project.

In-car traffic management services can contribute to reduce traffic congestion in the Amsterdam area (and other areas in the long term) and can give road users more accurate traffic information. The collected in-car Floating Car Data can improve the traffic management operation on the traffic centres.

Innovative aspects

What was procured is innovative:

The main innovative aspects of this procurement were: several new in-car traffic management services; a new Traffic Management tool for the operators in the traffic centres; new algorithms to distribute traffic over the road network (load balancing); new ways for traffic operators to communicate directly with road users; new in-car services dedicated to traffic around major events; improved open data of parking data; cooperation between road authorities, service providers and event organizers.

The procurement process itself is innovative:

The main innovative aspects of the procurement process were: parties were able to show unconventional solutions due to the use of a contest for selection potential suppliers; the contracts were very lean, which gave parties possibilities to invent; the contract was very much based on managing the risks; the contest also had a price reward for the winners, so small companies were stimulated to come up with ideas; the same contracts were awarded to two consortia in parallel; each consortium had to do its own evaluation;

The Procurement Process

Short description of the procedure used

The procedure of the procurement went as follows:

- Market consultation
- Price contest
- Selection
- Competitive Dialogue over contract
- Tender
- Evaluation based on criteria (quality and price).

The process started with a market consultation. Information was published and an open meeting was held, where all major stakeholders were present. The aim of the project was presented and the way to tender discussed.

A design contest was organised; suppliers were stimulated to come with innovative solutions. The top five of the proposals for regular traffic and the top five of the proposals for event traffic received a financial compensation. These top five organisations were then invited for the competitive dialogue and for the tender. Several bilateral meetings took place with these suppliers to discuss the terms in the contract and tender guideline. This resulted in a final contract and tender guideline that was equal for all parties. As a result, there was a good understanding about the project.

No ceiling prices were used in the tender in order to stimulate competition in content and in price. The procurement was for a service contract of less than three years. Reason to use this small timeframe was to use the results within one year. It was a lean contract with Rijkswaterstaat as procurer mainly focussing on monitoring the progress and managing the risks. Most Economically Advantageous Tender (MEAT) became the sole award criterion to be assessed on the basis of the best price-quality ratio (BPQR). This was to be assessed on the basis of award criteria linked to the subject-matter of the contract.

The procedure gave a lot of freedom for the contractors. Evaluation of the proposals took some more time and the comparison was more difficult as there was no ceiling price. After the contest there were a series of meetings with individual parties to discuss the terms in the contract and tender guideline.

Reasons for this procurement process

A contest was organised because Rijkswaterstaat did not know at that time what suppliers could deliver with respect to in-car traffic management services. This contest also served as a filtering; only the top five were invited for the competitive dialogue and tender phase. A financial reward was given for the top five of the contest to stimulate the participants to come with innovative solutions.

In the tender and the contract Rijkswaterstaat role was as limited as possible, to give the suppliers maximum freedom and maximum flexibility, but also maximum responsibility.

Key Results

In the end, four contracts were signed, with two separate parties (Consortium ARS-TNO and consortium Arcadis – VID). Within a period of 9 months, one million trips were made by the participants in the trials (the users), in which the dedicated in-car devices were used. At that moment, the smartphone was a new commodity that was used. APT learnt that it was difficult to involve in-car users, and that devices were primarily used over a short period of time, and not for the whole trip. It was also difficult for the contracted parties to create a save app with an easy-to-use human interface, that fitted the requirements needed for evaluation. Users do not like to register for trials and they want a faultless app. As a result, one of the contractors was not able to fulfil the requirements of the contract (involving enough users), resulting in a penalty for that contractor. Nowadays there are more apps on the market that predict traffic jams and give good feedback on floating car data. At the moment of the trial there was no common use. APT also learnt that influencing the driver's behaviour can lead to less traffic jams and congestions. The strong connection between traffic authority and commercial parties made it possible to influence trip choices, route choices and actual speeds.

Key Lessons Learnt

1. It was demonstrated that it is possible to distribute traffic over a network by providing different routes to different users.
2. Influencing the traffic can lead to less traffic jams and less congestions. The cooperation of traffic authorities and commercial parties makes it possible to influence planned routes and to give individual information and warnings.
3. It was difficult to involve sufficient participants (in-car users) for the large-scale tests.
4. Those users using the in-car device were prepared to use the in-car traffic management services even when that meant a slightly longer travel time.
5. One contractor was not able to fulfil the contractual obligations, leading to discussions about the penalty. In new contracts a more sophisticated exit procedure would be recommended.
6. Contractors had lots of freedom in their offer and there was no ceiling price. This made the evaluation of the offers difficult. A ceiling price is recommended when there is much freedom in the contents of the offer.
7. Two contracts were awarded in parallel. Firstly as a risk measure. The risks of not achieving the results were high. Even if one consortium would fail, there would be results. In fact, this happened; one consortium was not able to fulfil its contract with respect to the regular traffic. Secondly, different solutions were expected from the consortia, such that parallel contracts would lead to much more knowledge and experiences.
8. Aim of the project was that it would lead to operational in-car service on the Dutch market. Although the plans for market introduction were one of the selection criteria, this was not achieved. Both consortia learned from the project that there was no room for their services on the market.
9. An evaluation of the trials was part of the contract and the contractors had to evaluate their own solutions. There was doubt if this would lead to an independent evaluation. But this went good and resulted in qualitative good reports.
10. The contest phase led to many new ideas and possibilities (even more than tested in the trials).
11. Most responsibilities were with the consortia themselves. The coordination of Rijkswaterstaat was limited to monitoring and risk management. This went well and gave the consortia the freedom to develop their innovative ideas.

References and Further Information

Further information on the project can be found under (available in Dutch only):

[https://www.crow.nl/downloads/pdf/verkeer-en-vervoer/verkeersmanagement/2016-03-01-\(icr-er\)-20160301-amsterdam-onderweg-ei.aspx?ext=.pdf](https://www.crow.nl/downloads/pdf/verkeer-en-vervoer/verkeersmanagement/2016-03-01-(icr-er)-20160301-amsterdam-onderweg-ei.aspx?ext=.pdf)

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