A customer based implementation strategy for road pricing in the Netherlands

Analysis of several implementation scenarios for a national road pricing scheme in the Netherlands

Management Summary / October 2006
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Introduction

After a discussion of decades, in 2005 the Dutch Parliament decided on a road pricing policy. This decision, however, included one restriction: both the implementation and operational costs of the road pricing scheme will have to decrease to an acceptable level.

In order to get the right estimations of the costs of a national road pricing scheme in the Netherlands, the Ministry of Transport has organized a ‘Cost Monitor’. The 'Market Consultation' is part of the cost monitor. In the market consultation, the private sector is asked to contribute to the design of operational pricing per kilometre, including supporting information on cost, feasibility and risks that market parties can support.

Access, an operators consortium of Brisa Access S.A. (Portugal), NV Westerscheldetunnel and NedMobiel has been asked by the Ministry of Transport, Public Works and Water Management to undertake an analysis on possible implementation strategies for road pricing in the Netherlands, as part of the second phase of the Market Consultation.

This folder summarises the conclusions of this analysis.
A big bang comes with too many risks

A ‘big-bang’ introduction of kilometre pricing in the Netherlands is very risky and should be avoided. In our opinion, these risks can be summarised as follows:

1 > Technical risk: the system (front and / or backoffice) does not work well;
2 > Transition risk: from owner based taxes to marginal pricing fails or is not accepted;
3 > Car market risk: the effects on second hand car market (due to the abolishment of BPM) are underestimated;
4 > Income risk: Income risk: revenues are not as predicted;
5 > Project cost risk: higher implementation costs;
6 > Public acceptance risk: the road pricing scheme is not accepted by public;
7 > Social nuisance risk: social costs and nuisance will be enormous;
8 > Political acceptance risk: politicians turn themselves against the project.

Accordingly, the big bang introduces a lot of changes at once. These changes, especially when implemented all at once, introduce great risks in terms of acceptability, costs, revenue and technology. On forehand, the outcome is highly unpredictable.

Of course, whatever introduction strategy is set out, there will always be risks, mistakes, failures and unexpected developments. The majority of the ‘big bang’ risks is related to the reliability of technology and acceptability by the public. If these risks become reality in a ‘big bang’ implementation strategy, it will be too late to manage them. As a matter of fact, the risks can become a ‘show stopper’ then.
SCHEMATIC REPRODUCTION OF PRICING SYSTEM

- BACKOFFICE
- TAX SYSTEM
- CONTRACT + OBU ISSUERS
- TRANSPORT + OBU
- ENFORCEMENT
- ROAD + ROADSIDE EQUIPMENT

Legend:
- COMMUNICATION & CONTROL
- FINANCE
- CONTRACT
- INVOICE
One of the ways to minimize the risk and maximize the manageability is the development of a more gradual implementation scenario. A scenario that takes into account a focus on risks involved with the implementation of new technology and acceptability of the public.

In order to keep the mentioned risks manageable, an implementation strategy for a national road pricing scheme in the Netherlands should be based on the following characteristics:

- The improvement and maximization of public acceptability of the scheme;
- A thorough analysis on the variables of change that are introduced gradually.

The suggested implementation strategy is based on choices on and elaboration of these characteristics.
Create a market for OBU's

Drivers are people; and all people are different. They have different habits, different needs and also different requirements for their OBU. Defining requirements for an OBU that fits the demand of the average user will result in an OBU that doesn't fit demands of the real user. Furthermore defining requirements in 2006 for an OBU that will be used in 2012 will neglect technology development in the coming years. That is why a market for OBU's should be created instead. On that market OBU issuers (providers) will fight for their customers, based on price, added services, specific customer demands and design. This will keep the OBU cheap and up-to-date with the latest technology and user demands.
Acceptability is the key factor for successful implementation

As stated before, a lack of public, political or social acceptability can kill the project. Several recent initiatives underline the importance of public acceptability from a theoretical point of view. One of them is the platform “Anders Betalen voor Mobiliteit,” which was lead by Mr. Nouwen. Compared with the historical approach of intended road pricing policy by former Transport Ministers, the approach that was at the basis of the installation this platform differs in the sense that the focus is on acceptable solutions instead of a focus on technical ones. The Ministers of Finance and Transport did not formulate a new policy themselves, but asked a platform in which most important or involved NGO's were represented, to formulate one.

Also in literature, attention has been paid to public acceptability of road pricing. For example in MC-ICAM, an European Committee study on the implementation of marginal cost pricing in transport, criteria for a successful road pricing implementation were derived from dealing with barriers that obstruct this implementation. Three types of barriers were considered: technological or practical barriers; legal or institutional barriers and acceptability barriers. The study underlines that acceptability is the most important barrier (thus criterion) for implementation of road pricing and that the other barriers/criteria can be derived from it.

The conclusion that acceptability is the driving factor behind implementation success, puts a focus on the non technical-elements of an implementation strategy. Besides the system development (from no to all cars, from no to all roads, from present tax system to road pricing), thorough attention will have to be paid to the organisational an institutional developments that come with the introduction, as well as to boundaries to participate.
Based on the elaboration of acceptability in this report, and Access’ experience with the implementation of road pricing schemes, we have defined seven fundamentals for a successful implementation strategy:

1. Show benefits in an early phase: demonstrating benefits will lead to an increased acceptability for more comprehensive and sophisticated developments later on;
2. Start with a limited scope and focus on acute problem areas: a limited scope makes it possible for acceptability to grow in time;
3. Gradual differentiation of prices: the introduction of the scheme should be as less complex as possible, this includes no differentiation to start with;
4. Market development for future flexibility; the implementation strategy should be setting the right boundary conditions and institutional constellation, so that changes and variations in customer demands can be incorporated in the road pricing scheme.
5. Use existing structures and organisations: this minimises risks concerning fraud, database reliability, new registration, confidence, et cetera;
6. Communication, communication, communication: all elements are depending on how the reality is brought to the general public;
7. Easy access for the customers: introduction of road pricing should be kept simple, easy to explain, cheap and easy to access, this avoids extra barriers for the public to participate in the scheme.

Based on these fundamentals we have defined the following implementation strategy for a nationwide road pricing scheme in the Netherlands.
Key elements of the suggested implementation strategy

The implementation strategy that we have composed consists of the following elements:

1. Creation of a market for OBU’s
2. Frontoffice technology
3. Use of the existing RDW database
4. Use of existing enforcement organisations
5. Introduction of a geographical growth scenario
6. Introduction of a functional growth scenario
7. Interoperability

Ad1. Creation of an OBU market
When a stable structure, with a backoffice that can handle all OBU technologies, is in place, there is no limitation at all for the market to introduce an OBU that is based on other technology than GPS or Galileo and to develop all kinds of extra individual services (such as navigation systems, interoperability with toll operators, parking facilities, etc). This makes the introduction flexible and thus sustainable for future developments. The costs of this basis structure will be much less than a big bang introduction of road pricing. The rest of the costs are a responsibility of the industry.

Ad2. Frontoffice technology
The OBU will be used to charge the customers. When using GPS to start with road pricing, the customer will be confronted with a costly OBU (around € 250,- based on present predictions), and with no direct benefits that come from that (a 250 device to pay tax). That is hard to
Easy access for customers

The introduction of road pricing should be kept simple, easy to explain and cheap. This avoids extra barriers for the public to participate in the scheme. Easy access means, among other things, that the scheme should start with a flat price, a good customer service department, 'automatic installation' of the OBU, a thorough information campaign, no extra administration, forms or activities to participate and of course the lowest cost (in money and time) as possible for the customer.
explain to the public, and thus a possible acceptability risk. A technology growth scenario from simple and cheap solutions towards more advanced and expensive solutions could reduce this risk, but above all it gives the customer a very easy access to road pricing. Implementing alternative technology (DSRC or RFID) first instead of the required GPS/Galileo could decrease costs and risks to a large extend. In case RFID technology would be used the combination with EVI is possible. This could lead to great synergy between both projects.

Ad3. Use existing RDW database

The database of the Rijksdienst voor het Wegverkeer (RDW) is most suitable, because of the following elements:

> Every known car in the Netherlands is already registered;
> There is a legal obligation and procedure for customers to register mutations;
> RDW has experience with a nation wide database;
> RDW has connections with foreign colleges;
> The database can be used for enforcement.

Besides these advantages there is one other issue that is of great importance for a possible role for the RDW. The RDW itself is looking for a technology that can be used for an electronic license plate (EVI). In principle the technology behind tolling, road pricing and the electronic license plate could be the same. There will be a lot of synergy (introduction of EVI makes road pricing cheaper; road pricing makes the search for stolen cars easier) the moment both road pricing and EVI make use of the same technique, same OBU, same data base and same OBU
or VIN number. From the point of view of road pricing implementation, this will reduce costs, create a bigger social benefit, creates public acceptability and reduces risks.

*Ad4. Use existing enforcement organisations*

Using existing structures is a reliable, easy and cheap way to introduce a system based on marginal costs. There are two different approaches to execute enforcement using existing structures:

- **Privately by hiring bailiff services** (like is done with petrol stations)
  Disadvantage of using the present private enforcement scheme is that still not every procedure is automated due to the low amount of violators. In case of road pricing a fully automated system is needed.

- **Publicly by the Centraal Justitieel Incassobureau (CJIB)**
  The CJIB is a department of the ministry of Justice and responsible for collecting all public fines (like a tax). The CJIB already works with big data streams and also works together with the RDW. Due to the fact that the CJIB is strictly bound to the enforcement of public laws, the CJIB is not used to working in a private environment.

*Ad5. Introduction of a geographical growth scenario*

Geographical growth means a gradual change from a situation with no roads that are kilometre charged, towards a situation where all roads are part of a marginal cost pricing system. It should be noted that geographical growth is not the same as (however depending on) the
gradual installation of road side equipment. It has great advantages to follow a geographical growth scenario for the introduction of road pricing in the Netherlands.

- People get used to the system and to road pricing;
- The technical system can be improved and adapted based on experiences in real situations;
- The road pricing scheme can start cheap, simple and soon because well known and simple techniques can be used;
- It buys time to combine the technical installation of road side equipment with regular maintenance activities.

A geographic growth scenario would in our opinion consist of three steps:

1. pilot projects
2. road pricing on the main roads
3. road pricing on the entire network

The last step should be implemented in two phases: first an administrative price and later on marginal cost pricing on all roads. The figure on page 19 draws the scenario.

Before this scenario starts, the technical implementation of all OBU's in all cars will have to be completed. The abolishing of MRB and BPM can only start after the geographical growth scenario moves into the second step (road pricing on all main roads).
Use existing structures

Existing structures and organisations with a reliable name in the field of car registration and administration (like the Rijksdienst voor het Wegbeheer) or with a strong name and experience in enforcement (like the Central Justitieel Incasso Bureau) can contribute to the general acceptance of the road pricing scheme. Furthermore using these structures can save implementation costs and make the operations more reliable. Using the existing RDW database meanse no extra registration (easy access) and no double and possible non identical registration of cars.
We would not advice to combine the introduction of road pricing and the ‘versnellings-projecten’ at all cost. When, however, these two processes can enforce each other, it is a real possibility to improve acceptability of the road pricing system.

Ad6. Introduction of a functional growth scenario

Functional growth means a gradual change from tax on possession (MRB) or acquisition (BPM) of vehicles to a marginal cost pricing system, in which is paid for each kilometre. Furthermore, it means a possible gradual change from a flat and steady kilometre price to a price that depends on the location, time and vehicle characteristics (type of fuel, weight, motor volume, etc).

> Acquisition tax BPM
An important problem for the abolishing of the BPM is the result on the market for second hand cars. As soon as the BPM on new cars is abolished, all second hand cars are too expensive in relation to the new ones. The old cars have been bought for a price including BPM. The effects on the second hand car market can be minimised by a very gradual phasing out of the BPM. The phasing out of the BPM will be linked to the phasing in of the road pricing scheme on the main network. As soon as all cars and all roads are equipped with OBU’s and road side equipment, the transition can start.

> Possession tax MRB
Because our vision is to start with a simple technology that is introduced on the main roads, followed by a full penetration of road pricing in the Netherlands when technology is ready; there are (at least) two moments on
> THE THREE AXES OF CHANGE

1 > TAXATION: BPM AND MRB  \(\rightarrow\) FUNCTIONAL GROWTH  \(\rightarrow\) DIFFERENTIATED ROAD PRICING

BPM AND MRB  \(\rightarrow\) FUNCTIONAL GROWTH  \(\rightarrow\) FLAT ROAD PRICING  \(\rightarrow\) FUNCTIONAL GROWTH  \(\rightarrow\) DIFFERENTIATED ROAD PRICING

2 > NOWHERE / NO ROADS  \(\rightarrow\) GEOGRAPHICAL GROWTH  \(\rightarrow\) EVERYWHERE / ALL ROADS

TOTAL NETWORK  \(\rightarrow\) ADMINISTRATIVE TOLL  \(\rightarrow\) TOLLED NETWORK

3 > NOBODY / NO VEHICLES  \(\rightarrow\) PENETRATION GROWTH  \(\rightarrow\) EVERYBODY / ALL VEHICLES
which road pricing is introduced to the people (first on the main roads, secondly on the secondary roads as well). Both moments, this introduction should be accompanied by reductions of present taxes for reasons of acceptability. This means that not all taxes should be reduced with the introduction of road pricing on the main roads, but that some taxes will have to be kept in force for an acceptable introduction of road pricing on secondary roads. We think that MRB is most suitable to do this, because BPM takes more time to be phased out and MRB has a stronger link with the secondary roads, due to the regional ‘opcenten’.

> **Price differentiation**

There is no technical restraint on differentiated road prices from the start of the introduction of the road pricing scheme, because differentiation will be managed in the back office, which is up and running from moment one. The main reason to introduce a gradual change from a flat price towards differentiation is that for reasons of acceptability, the system should start as simple and transparent as possible. On the other hand, price differentiation increases the possible positive effects on congestion and mobility. Therefore, we recommend to start with a flat price, but to introduce differentiation as soon as possible. It should be noted that a flat price as we define it, can be differentiated for vehicle classes (truck, cars, motorists, etc.)
Ad7. Interoperability

As stated before, acceptability of the road pricing scheme by the customers is essential. This means that road pricing will have to have an easy access based on a very cheap OBU. To make this possible the cost of interoperability should not be a part of the total costs of implementation, but has to be delivered as an added service for Dutch and European customers. Added services will be the responsibility of the operator / OBU issuer.