

Thredbo conference September 2005, Lisbon

Draft, not to be quoted

Evaluation of tendering public transport in The Netherlands

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1 INTRODUCTION

Aim of the research described here is to analyse the effects of a new regulative environment for public transport in the Netherlands as of January 2002. This environment is laid down in the Passenger Transport Law 2000. The subject in this Law is public transport in regional areas, in small and medium sized cities en in the four main four conurbation's.

In chapter 2 the organisational structure of the public transport sector in the Netherlands is positioned. Chapter 3 contains a quantitative background of the sector. Tendering and the effects of tendering are the subjects of respectively chapters 4 and 5. Chapter 6 has market access as subject. The paper is finalised by some conclusions and recommendations.

2 THE REGULATIVE SETTING OF THE PUBLIC TRANSPORT SECTOR

2.1 The Players

Since 2001 policy on public transport in the Netherlands is decentralised. The responsibility now rests with 19 Public Transport Authorities (PTA's): 12 Provinces and 7 conurbation's. Out of these 7, in four big conurbation's the PTA own the transit company (municipal companies, Amsterdam, Rotterdam, The Hague, Utrecht). Other companies operate in the smaller cities and the rural areas. Connexxion is the market leader in this group. Since the opening of the market in 2001 a number of foreign companies have acquired formerly Dutch owned companies. For instance the northern companies GVB-Groningen, and GADO were acquired by Arriva, and the southern companies SBM and BBA are now in possession of Connex.

The policy of Dutch Government is aimed at enforcing competition via public tendering. For that case the monopoly of the former state owned VSN-group had to be broken down, since that company had a dominant market position. Before competition could take place the VSN-group had to be dismantled. VNS therefore was split up in VSN-1 and a VSN-2. According to an article in the Passenger Transport Law 2000 (see section 2.2), excessive market power is prohibited. A maximum of 50% market share was laid out as standard. VSN-1 was composed out of the former rural companies NZH, ZWN, Oostnet and Midnet. VSN-1 later on is restructured and renamed Connexxion Holding. VSN-2 was intended to be a temporary holding. It consisted of the companies. VEONN, BBA en Hermes. These companies were supposed to be sold externally. VEONN was sold to Arriva (UK) , BBA to Connex (France). The latest plans concerning Hermes are that it is probably again taken back in the Connexxion Holding.

2.2 The Passengers Transport Law 2000

The Transport Law of 2000 sets for regional and municipal public transport a twofold goal:

- a selective and regional differentiated growth in public transport patronage
- a substantial improvement of the cost recovery ratio, to at least 50%

One of the instruments Government uses to reach these goals is introduction of competition. This is also imposed by the EU. The format of competition chosen in the Law is temporarily (once in 6 years) contestability of concessions. These concessions are tendered by the competent authorities, i.e. the Provinces and conurbation's. Once a operator has acquired a concession, it gives the right to operate public transport in that concession area for the designated period of time.

Expectations behind introducing this new legislation are that the thread of competition stimulates operators to act more customer oriented and by this means produce public transport more efficiently and effectively. Competition would further lead to more innovation, freedom of choice for customers and PTA's and enhance entrepreneurial behaviour.

An important part of the Law is decentralisation of the responsibilities to regional authorities (PTA's). The PTA's receive subsidies from the State and put these through to the operators.

Rail transport (both regional and national) is not under jurisdiction of the Law 2000. The concession for the national train services is granted until 2012 (without tendering) to Dutch Railways. It is not clear at the moment what will be the situation for the regional train services.

2.2.1 Regional Public Transport

The Law provided for phased introduction of competition by tendering concessions. Intended was that –spread over the nation- by the beginning of 2004 35% of the contestable turn over for the regional market was tendered. January 1st 2006 all regional concessions had to be tendered.

The results of a mid term evaluation of the actions and effects (Berenschot, 2004) brought Government to the opinion that tendering is a good instrument and should be obliged, however the original time path was judged too optimistic. Government now proposes that as from January 1st 2007 all regional and small city public transport in the Netherlands must publicly tendered.

The intentions of Government (Kabinetsstandpunt, 2004) will be discussed in Parliament in September 2005.

2.2.2 Municipal public transport

We define the regional market as the market outside the four main municipalities (Amsterdam, Rotterdam, The Hague and Utrecht). These four cities exercise specific

features that make it necessary to distinguish them in the research work at hand. Public transport in each of these cities is supplied by a municipal (publicly owned) company.

Other peculiarities are:

- rail infrastructure: without exemption, public transport in the four big cities is characterised by mixed exploitation of bus, tram and metro. Issues with respect to infrastructure are i.a. strategic ownership, barriers to market entrance, complex situation of rolling stock
- integrated complex networks (synergy between bus and rail)
- high level of investments in infrastructure and rolling stock

Because of this complexity an exemption for obliged tendering as from January 1st 2007 is made by the Minister. For the municipal concessions the policy intentions of the Minister are now:

- tendering will be obliged
- privatisation or at least administrative independence from the municipality before January 1st 2007
- tendering of the municipal bus concessions before January 1st 2009
- tendering of the municipal rail concessions before January 1st 2017

In the meanwhile the municipal companies are not allowed to tender in other concessions (reciprocity).

In response to reactions from the parliament, the Minister allows some variability. For municipalities (such as Amsterdam) who wish to tender combined bus and rail concessions as one integral package, the Minister is willing to extend the term of obligation of tendering till January 1st 2012 under the strict condition that at that moment in time the whole package of bus, tram and metro concessions is put contestable.

3 SOME BACKGROUND FIGURES OF THE SECTOR

To give the reader some background information, in this chapter the public transport sector is described.

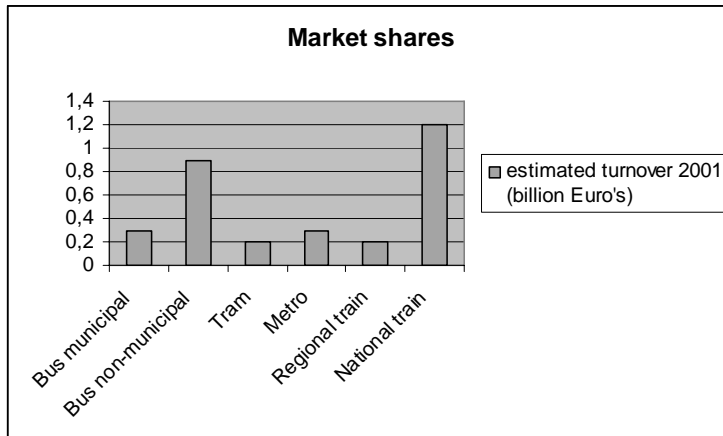
The research in this paper is aimed to public transport in rural and urban concession areas. The modalities concerned in these areas are Bus, Tram and Metro (BTM). These modalities are the research object of the authors and form the delineation of this paper.

The administrative structure of the public transport sector is based on concession areas. Holland is divided in 74 concession areas. There are 19 competent authorities who are responsible for these concessions. The modalities concerned are:

1. bus municipal
2. bus non municipal
3. tram
4. metro
5. regional (decentralised) train
6. national train

The object of our research and thus for this paper are the first 4 categories of modalities. In illustration 1 the estimated turnover (sales) is rendered (Ecorys, 2004)

Illustration 1, Public Transport market in the Netherlands



3.1 Modal split

Reference is given with respect to the developments of public transport in the Netherlands in the past couple of years. The trend for public transport is negative. Not only is BTM-use declining, but because of the increasing use of the car and bicycle, the share of public transport is rapidly decreasing from 4.1% in 2001 to 3.5% in 2003.

Table 1, Performance public transport sector 2003 (Kabinetstandpunt, 2004)

passenger kilometres per year		
	billion	share
car driver	92,9	48,7%
car passenger	53,2	27,9%
train	14,5	7,6%
bus/tram/metro	6,6	3,5%
moped	0,9	0,5%
bike	13,9	7,3%
walk	3,9	2,0%
rest	5,1	2,7%
Netherlands	190,9	100,0%

There are a couple of obvious reasons for the declining trend in public transport patronage:

- increase in car use and car ownership,
- decrease in public transport supply due to subsidy cuts,
- increase in use of bicycle due to favourable weather conditions
- increase in public transport-fares

3.2 Performance BTM

BTM is the primary focus of this paper. In this section the sector is positioned. In table 2 some performance indicators of BTM are shown.

Table 2, BTM performance

	pass. km's	%	revenue	%	revenue /pkm	%	vehicle hrs/wk	%
2001	4.792.319.919	100	506.409.408	100	0,106	100	missing	
2002	4.200.921.714	87,66%	521.869.070	103,05%	0,124	117,56%	303.461	100
2003	4.289.607.954	89,51%	530.722.539	104,80%	0,124	117,08%	319.016	105,13%
2004	4.176.963.643	87,16%	540.661.386	106,76%	0,129	122,49%	314.128	103,52%

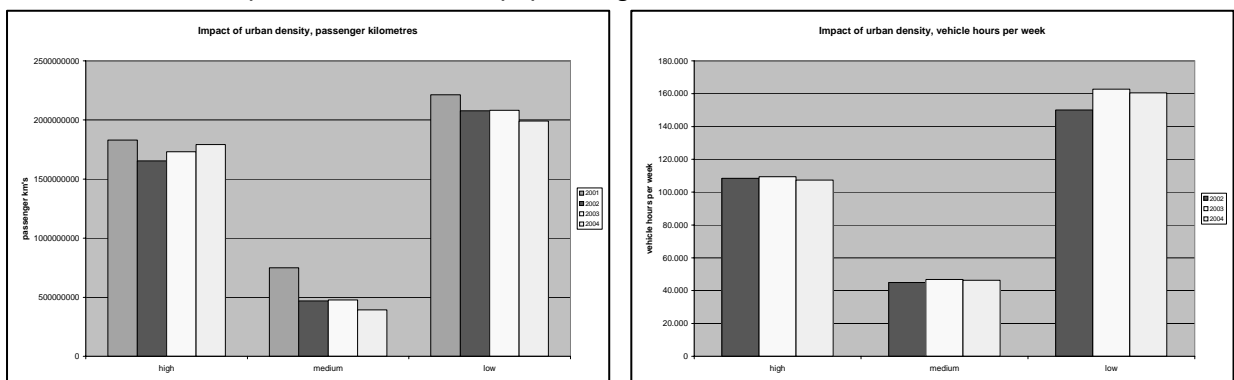
BTM Passenger kilometres (demand) over time is decreasing while revenue is increasing. This is caused by severe fare increases.

The decrease in BTM use is not evenly spread. As can be seen in table 3, the dense urban areas were able to increase patronage.

Table 3, Urban density and BTM supply and demand

	vehicle hours BTM (%)			passenger km's BTM, 2001-2003 (%)		
	density > 2000 inh/km2	density < 1000-2000 > inh/km2	density < 1000 inh/km2	density > 2000 inh/km2	density < 1000-2000 > inh/km2	density < 1000 inh/km2
2001				100	100	100
2002	100	100	100	90.38%	62.57%	93.89%
2003	100.89%	104.16%	108.48%	94.59%	63.76%	94.01%
2004	98.94%	103.13%	106.93%	97.90%	52.69%	89.94%

Illustration 2, Impact of urban density, passenger kilometres and vehicle hours



The number of passenger kilometres in the highly urbanised areas (more than 2,000 inhabitants per Sq. km area) is rather stable. 9 out of the 71 investigated cases are defined as high density, 14 as medium dense (1,000-2,000 inhabitants per Sq. km) and 48 areas

have a rather low urban density ($< 1,000$ inh./Sq. km). Especially the number of passenger km's in the medium and low density areas/concessions is decreasing over time. The BTM supply (expressed in vehicle hours per week) shows a different trend. BTM supply stays constant or even increases over time in all types of areas.

Another useful differentiation is between municipal and non municipal settings. We define municipal as BTM in the four main conurbation's (Amsterdam, Rotterdam, The Hague and Utrecht).

Table 4, Municipal companies perform better.

Municipal companies	pass.km's	revenue	revenue/pkm	veh.hrs.
2001	111,0%	94,0%	85,0%	missing
2002	100,0%	100,0%	100,0%	100,0%
2003	105,0%	106,0%	101,0%	98,0%
2004	109,0%	112,0%	103,0%	96,0%
Non-municipal companies	pass.km's	revenue	revenue/pkm	veh.hrs.
2001	116,0%	100,0%	86,0%	missing
2002	100,0%	100,0%	100,0%	100,0%
2003	100,0%	98,0%	98,0%	109,0%
2004	94,0%	96,0%	103,0%	107,0%

The four main municipalities who own their operator has suffered a severe cut in budget that leave them no alternative than to cut supply (vehicle hours). Despite and contrary of reduction in supply, demand and revenue in the cities developed favourable.

3.3 Efficiency

The finding of falling demand and increasing supply lead to the conclusion that the efficiency of BTM in the Netherlands must have declined over time. Table 4 shows that this is indeed the case. We define efficiency as the number of passenger kilometres per vehicle hour. Conspicuous is that the decrease in efficiency over time occurs mainly in the medium and low dense areas.

Table 5, Impact of urban density on efficiency

	efficiency (number of pass.km's/veh. hour)			
	high	medium	low	
2001	(missing)	(missing)	(missing)	(missing)
2002	304,97	208,34	277,09	276,9
2003	316,38	203,81	255,76	268,9
2004	333,87	170,08	248,20	265,9

In appendix 1 efficiency performance figures for all the companies that operated in 2004 are included. The efficiency by type of operator is given in table 6.

Table 6, Efficiency per type of operator

Efficiency	2002	2003	2004
Connexion group	276,8	264,5	246,5
Municipal companies	322,3	345,3	365,4
others	215,7	192,8	187,2

Efficiency between companies fluctuates significantly (appendix 1). The rural companies have more or less the same efficiency (outliers caused by data imperfections). The municipal companies and especially RET and GVB-A produce very efficiently. The occupation of the vehicles in the cities is very high. The GVU and the former small urban

companies SVD and SBM produce relative inefficient. Compared to her close competitors Arriva and Connex, the state owned Connexion-holding produces rather efficiently. Over time efficiency in the Connexion-group companies is declining. Has this something to do with the tendering of concession? In the next chapter we will elaborate on this.

3.4 Assessment of quality perceived

Table 7 shows the average quality assessment of passengers. These figures are aggregates of some 80.000 individual surveys. The Klantenbarometer survey is held every November since 2001. Due to a different survey method of on the one hand surveys 2001-2003 and on the other hand survey 2004, it is possible that variation in outcomes between these samples are not random.

The decline in quality assessment in 2002 compared to 2001 and the increase in 2003 and 2004 appears at most of the companies. A positive exception is MTI. This small company did put a whole new service concept in the market. Passengers were involved themselves with planning and scheduling. The concept was based on close proximity, so walking distances to destinations were small. Small busses operate on fixed routes but without fixed stops. Passenger can board and get out of the busses anywhere. MTI is similar to the Turkish dolmus concept. This newcomer on the market is valued high by customers. Unfortunately the business concepts was not as strong as the planning and service concept, so in 2004 MTI was declared bankrupt. This is clearly shown in the results of the quality assessment survey 2004. Also the score of Arriva is over time relatively good (above population mean). Except from HTM the services of the municipal companies GVB-A, RET, GVV is not valued too high by passengers. Also the Connexion group is not performing well on this item. It seems an overall trend that small companies are better able to react adequate on changing demands of customers than the big companies (for market share see appendix 1). This possible correlation will be investigated in more detail in later research by the authors.

Table 7, Quality assessment,

	2001	2002	2003	2004
Connexion	6,67	6,55	6,74	7,03
BBA Connex	6,99	6,76	6,86	7,17
Arriva	6,80	6,81	6,98	7,20
Hermes Connexion	6,86	6,57	6,88	7,18
Syntus	6,92	0,00	0,00	7,19
Noordned Arriva	6,75	6,65	6,95	7,28
Stadsvervoer Nederland				
Novio	7,26	6,69	6,74	7,25
Limex (Connex)				7,42
Taxicentrale Renesse				
GVB Amsterdam	6,85	6,55	6,87	6,91
HTM	6,71	6,48	7,10	7,26
GVU Utrecht	6,51	6,64	6,77	7,23
RET Rotterdam	6,75	6,31	6,37	6,80
Stadsbus Maastricht/Connex	6,74	6,92	6,98	7,37
SVD (HTM)	7,39	6,87	6,76	7,52

Area (Maaskant)				
MTI	6,83	7,50	7,50	6,80
Average	6,84	6,70	6,90	7,14
standard deviation	1,98	1,14	1,07	1,46

3.5 Cost recovery

The data used for this research also contains revenue per year per concession area. Revenues added to the State subsidy granted to the PTA's (only available for the year 2003) results in an estimation of the total turn over in 2003 per PTA. Revue is exclusive of the revenue of the student contract that the Ministry of Education entered into the public transport operators¹.

Table 8, Turn over and cost recovery 2003

	State subsidy (€)	revenue (€)	estimated turn over (€)	estimated Cost Recovery Ratio
Groningen	34.977	18.384	53.361	34,5%
Friesland	26.610	11.741	38.351	30,6%
Drenthe	17.927	2.476	20.403	12,1%
Overijssel	13.845	6.564	20.409	32,2%
Regio Twente	17.240	5.607	22.847	24,5%
Gelderland	37.517	14.411	51.928	27,8%
KAN	43.396	20.887	64.283	32,5%
Flevoland	21.573	11.837	33.410	35,4%
Utrecht	9.535	12.260	21.795	56,3%
BRU	64.453	28.605	93.058	30,7%
Noord-Holland	43.630	23.282	66.912	34,8%
ROA	261.098	141.364	402.462	35,1%
Zuid-Holland	56.109	40.824	96.933	42,1%
Stadsgewest Haagland	117.140	64.594	181.734	35,5%
SRR	159.558	77.992	237.550	32,8%
Zeeland	15.764	5.565	21.329	26,1%
Noord-Brabant	53.562	19.537	73.099	26,7%
SRE	23.232	9.239	32.471	28,5%
Limburg	37.831	15.553	53.384	29,1%
total	1.054.997	530.723	1.585.720	33,5%

Average cost recovery is about 34% High cost recovery takes place in the region of Utrecht and Zuid-Holland. These are two relative high densely populated provinces. Cost recovery is low in Drenthe, which is a sparsely populated region.

¹ The total value of this student contract amounts for approximately € 112 mln. per year. The subdivision of this amount by concession areas and the PTA's however is not known.

4 TENDERING IN THE NETHERLANDS, FACTS AND FIGURES

4.1 Data used

The direct aim of the research work of the authors is to get more insight in the effects of tendering and in the processes and reasons behind those effects. What conditions should be fulfilled for tendering to be successful? What organisational setting is mandatory? To answer these questions the authors formed and filled a dynamic data base, consisting of data of several public transport related topics for the years 2001-2006. Of course data for the latter years are not yet available. The data set consists of several parts:

- passenger kilometres and fare box revenue, source: WROOV (demand)
- vehicle hours, source RIG (supply)
- passenger assessment of perceived public transport-quality, source: Klantenbarometer.
- background variables such as incumbent operator, new operator, number of bids, type of contract, incentive schemes et cetera.

The authors processed the data and formatted it to the level of concession areas.

WROOV: a large survey commissioned under responsibility of the Minister of V&W that is the basis for the subdivision of fare box revenues among operators. The revenues are exclusive of the revenues of the student contract and of para transit systems.

RIG: based on the schedules (time tables) provided by the transit operators.

RIG proceeds this data to travel information and makes it available for users via Internet and phone. The information units of the RIG data are public transport lines and public transport stops. Since public transport-lines cross concession boundaries, an assignment algorithm is developed by the authors. This algorithm assigns public transport supply according to the number of stops in a certain concession area. So the assignment method is based on transportation principles rather than on administrative principles (i.e. competency of PTA). The parameter derived from these data is vehicle hours per concession area and represents public transport-supply. Data of a representative week in November of each year is used.

Klantenbarometer: a yearly survey in November among users of public transport asking passengers for their valuation of the trip they made. Some 30 quality items are surveyed and per year more than 80.000 respondents give their answers. The answers are scaled from 1 to 10 (1 bad, 10 excellent), hereby representing the Dutch education rating system. NB. Commercial relevant information is very hard to collect. Due to this we don't possess direct financial figures, but were able to use proxies or derive such information from other sources.

Concession areas and the competent PTA responsible for public transport in these areas fluctuate over time. Concession boundaries shift, concession responsibilities are transferred from one PTA to the other and concession areas are clustered. This variance in the basic research object (i.e. the concession) is dealt with by the authors by fixing the situation of concession boundaries and responsible PTA on the situation as of January 2004, the basis year. Data of others years is calculated back to this basis year. In 2004 74 concession areas are under the responsibility of 19 competent authorities. We clustered a few very small concession areas (Dutch isles) and use data of 71 concession areas. In appendix 2 a chart of the concession areas is included. The unit of tendering in most cases is

concession area. In some instances PTA did tender line concessions. These line concessions are not taken in to consideration in this research.

4.2 Concessions described

In the left most quadrant of the chart in appendix 3 the ex ante situation 2001 is rendered. Shown is the market share of transit companies by the 71 concessions. In table 9 the concession areas are divided according to their urban density. The overall majority of the concessions has a low density. Enclosed in the 9 concessions with a high density are the four main conurbation's of the Netherlands (Amsterdam, Rotterdam, The Hague and Utrecht). These concessions figure largely in this group because of the peculiarity that public transport in these concessions is exercised by a city owned municipal transit company . Although these high urbanised areas constitute only 13% of the total number of concessions, their importance is far bigger if expressed in passenger kilometres or vehicle hours.

Table 9, Typology of concessions

	% concession areas	number of concession areas	%passenger kilometres (2001)	% vehicle hours (2004)
urban density > 2000 inh./Sq. km	13%	9	38%	34%
urban density < 1000-2000 > inh. /Sq. km	20%	14	16%	15%
urban density < 1000 inh./Sq. km	68%	48	46%	51%
total	100%	71	100%	100%

With respect to tendered concessions, table 10 gives an overview.

Table 10, Current situation concessions tendered

tendered in	number of concessions	%	passenger km's 2004 (%)	vehicle hours 2004 (%)
2002	11	15,5%	6,2%	10,0%
2003	8	11,3%	4,7%	6,8%
2004	14	19,7%	20,0%	25,8%
2005	11	15,5%	6,6%	9,4%
sub total	44	62%	37,5%	52%
not (yet) tendered	27	38%	62,5 %	48%
total	71	100%	100%	100%

The assignment to the year of tendering is the moment that the (new) operator starts operations. Since the operators need approximately half a year preparations time after granting the concession, at this moment in time already is known what the situation is end 2005. End 2005 62% of the BTM concessions is tendered, representing 52% of the

number of vehicle hours (production). Vehicle hours can be interpreted as a proxy for turn over.

The first round of concessions has mainly taken place in the more rural areas, as shown in table 11.

Table 11, Cases tendered by urban density

	> 2000 inh./Sq.km	<1000-2000> inh./Sq.km	< 1000 inh./Sq.km	total
number of concessions	9	14	48	71
tendered concessions 2002-2005	3	8	33	44
%	33,3%	57,1%	68,8%	62%

4.3 Aims of Passengers Transit Act 2000

Since the aim of the Passenger Law 2000 is based on the contestable market, in table 12 the same figures are shown excluding the municipal transit companies (estimated yearly turn over € 0,9 billion).

Table 12, Current situation non municipal concessions tendered

tendered in	number of concessions	%	passenger km's 2004 (%)	vehicle hours 2004 (%)
2002	11	16,6%	10,6%	14,4%
2003	8	12,1%	8,1%	9,7%
2004	13	19,7%	31,1%	27,8%
2005	11	16,6%	11,3%	13,5%
sub total	43	65%	61.2%	65,4%
not (yet) tendered	23	35%	38,8 %	34,6%
total	66	100%	100%	100%

End of year 2005 65% of non municipal concessions representing 65% of turn over is tendered. Competent authorities expect to tender in 2006 11 more concessions. The expected outcome January 2007 is thus that 53 out of the 66 non municipal concessions will be tendered, representing 91% of vehicle hours (turn over). So the goal of the Government (100% of the contestable non municipal market tendered by January 1st 2007) is within reach.

5 EFFECTS OF TENDERING

In the previous chapter is mentioned that it very likely the aims of the Government with respect to the number of cases tendered (or the contestable turnover tendered) will be reached in the designated period of time. However tendering is no goal in itself but a means to reach a higher level goal, i.e. more passengers and a higher cost recovery. So lets look to these goals in more detail.

For this purpose we defined a research group and a reference group. The research group consists of the tendered cases. The reference group is the group non tendered cases. The yearly number of cases in each of these groups varies. As from 2002 every year the tendered group will increase in size and the non tendered group decrease. This dynamic behaviour is from a research point of view hard to handle. We tackled this problem by defining strictly delineated groups of concessions and follow these groups over time by analysing a number of variables. The delineation we used is the first tender moment. So the group 2002 consists of the concessions that were publicly tendered in the calendar year 2002, and so forth and so on. The assignment of individual cases to a group is dependent on the instant of data collection.

5.1 Primary effects

We distinguish between primary and secondary effects of tendering. The primary effects are directly linked to the aims of Government, the secondary effects are underlaying.

5.1.1 Public transport supply

We analysed the trend in supply (vehicle hours).

Table 13, Vehicle hours per week

	conc. tendered 2002	conc. tendered 2003	conc. tendered 2004	conc. tendered 2005	conc. not tendered 2002-2005	all conces- sions
performance 2002	100	100	100	100	100	100
performance 2003	105,23%	118,42%	97,91%	113,63%	106,14%	105,13%
performance 2004	101,47%	122,88%	96,64%	111,82%	104,10%	103,52%

Except from the concessions tendered in 2004, all concession show an increase in public transport supply in the years that are under research. Striking is the growth in supply for the concessions that were tendered in 2003 and 2005. They show a significantly higher BTM supply than the group concessions not tendered. We conclude from this and from detailed analysis of granted bids and contracts of specific tenders that tendering has a positive effect on supply. This effect is partly initiated by the PTA's themselves. If PTA's ask for more supply, operators encompass this in their bids and offer more supply (higher frequencies, longer operating hours etc.).

5.1.2 Passenger kilometres

Did the extra supply lead to more public transport use?

Illustration 3 and table 14 show passenger kilometres and fare box revenue per passenger kilometre for the 4 research groups and the reference group. The conclusion can be drawn that on this level of aggregation there is no significant difference between the group tendered concessions on the one hand and the group non tendered concessions on the other hand. The only exemption is the group concessions tendered in 2002. These concessions show a slight increase in patronage, but it not certain if this is caused by tendering. What we do see in all of the groups is the overall declining trend of patronage. A trend already described in chapter 1. It seems that the possible positive effect of tendering on public transport use is not strong enough to compensate for this overall trend. Because of de increase in fares the revenue per passenger kilometre is rising, however this has nothing to do with tendering.

Illustration 3, Public transport demand

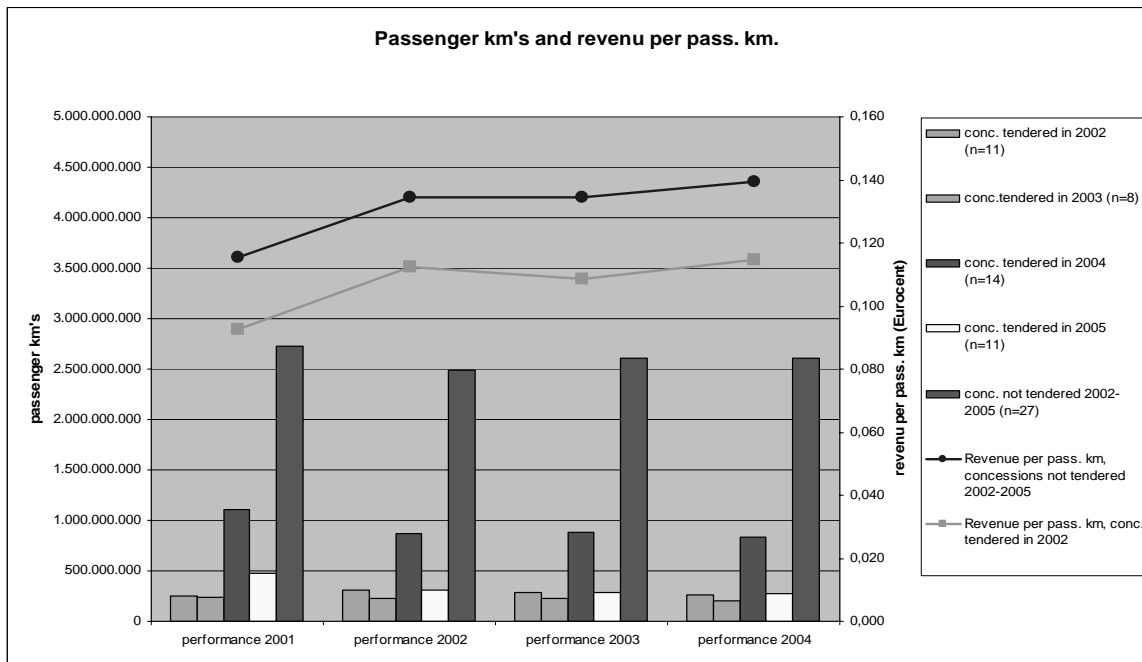


Table 14, Passenger kilometres

	conc. tendered 2002	conc. tendered 2003	conc. tendered 2004	conc. tendered 2005	conc. not tendered 2002-2005	all concessions
performance 2001	100	100	100	100	100	100
performance 2002	127,24%	95,72%	77,86%	63,98%	91,56%	87,66%
performance 2003	117,31%	95,57%	79,03%	60,86%	95,80%	89,51%
performance 2004	105,16%	84,52%	75,17%	57,51%	95,87%	87,16%

5.1.3 Quality assessment

Passengers using public transport value it every year by means of answering a survey. It is interesting to investigate whether there is a relation between quality assessment and tendering of concessions. PTA's put their wishes and demands for the level of service in their terms of requirements. Through these terms PTA's try to mediate between the needs of the passengers they represent (and who don't have direct access to operators) and public transport operators. In real world however PTA's don't know exactly what passengers want, and besides, the passenger does not exist. It is a amorphous group of individuals with multiple –and often conflicting- wishes and demands. So to diminish uncertainty PTA's that are not familiar with the instrument and procedures of tendering, require extra supply. We noticed that these requirements were fulfilled by the operators (more vehicle hours), but noticed also that passengers apparently have other preferences. Everywhere in Europe this trend is recognisable: in the first round of tendering the strategy is set on getting more supply. In the following tenders PTA's steer more on quality aspects.

Table 15, Quality assessment of BTM use by passengers

	conc. tendered 2002	conc. tendered 2003	conc. tendered 2004	conc. tendered 2005	conc. not tendered 2002-2005	all conces- sions
performance 2001	6,94	6,85	6,81	6,78	6,66	6,58
performance 2002	6,84	6,65	6,65	6,71	6,50	6,63
performance 2003	6,99	6,94	6,88	7,06	6,63	6,56
performance 2004	7,22	7,24	7,21	7,16	6,94	7,11

In table 15 the overall average assessment –result of an average of some 30 quality items– is rendered. For all groups of concessions the customer appreciation stays approximately the same. The steep rise in 2004 probably this has something to do with a change in survey method.

The group concessions tendered in 2002 experienced two years in the ex ante situation (after tendering). Effects of tendering must be first of all become tangible in this group. Relatively –compared to 2001– the group concessions that is tendered in 2001 performs slightly better than the group concessions not tendered. The significance of this difference related to the tendering process is subject to ongoing research of the authors.

The Klantenbarometer survey also gives valuable insight in significance and assessment of underlying quality factors.

Although it has no direct link with the effects of tendering we give some results here.

Table 16, Assessment quality elements 2004

quality elements of the trip	Average assessment 2004 (rate 10 = most positive)	Percentage respondents 2004 that value an item high priority for improvements.	significance 2004 (%)
boarding/getting of	8,12	1,6%	7,2
ease of buying tickets	7,84	1,8%	7,0
customer friendliness	7,15	2,2%	8,3
driving quality	6,99	2,9%	9,5
ease of finding a seat	8,50	3,4%	6,3
information on stops	7,04	4,0%	5,1
noise in vehicle	6,00	5,7%	5,0
cleanness of vehicle	6,58	6,1%	6,8
reliability time table	6,90	7,7%	11,2
frequency/interval	6,54	12,8%	15,7
information in case of delay	4,35	22,7%	5,0
fare	4,54	25,5%	2,8

Overall the aggregate priorities and the average quality assessments do correspond with each other. High valued items do get in lesser extent a high priority than less valued items. The Spearman rank correlation therefore is high (-0,89). Price is mentioned most as item

that has to be improved, followed by information. This outcome is consistent with other research on the importance on reduction of uncertainty by means of providing travel information. The items mentioned less are improvements of boarding and getting out. This seems logical since in most of the ToR of the PTA's demands for low floor rolling stocked are set. In future Terms of Requirements more emphasis should be put on reliability, information and fare. With the introduction of the chip card in 2007 it is possible for PTA's and operators to use differentiated fares.

5.1.4 Cost recovery

We concluded that the first aim of the Passengers Transport Law (increase in patronage) is not (yet?) fulfilled. How about the second goal, enhancing cost recovery? Already mentioned is that is very hard to collect financial data. The only financial data we were able to collect is used for an estimation of the cost recovery ratio per PTA in 2003. We expect the efficiency parameter 'number of passenger kilometres per vehicle hour' is correlated to cost recovery. This assumption is tested on the data for 2003. The result is a R of 0.4537, meaning a rather strong positive correlation. In the analysis described in this chapter the parameter 'passenger kilometres per vehicle hour' is used as a proxy for cost recovery.

Table 17, Efficiency , number of passenger kilometres per vehicle hour (absolute figures)

	all cases	tendered in 2002	tendered in 2003	tendered in 2004	tendered in 2005	not tendered
performance 2002	276,9	201,3	258,9	206,5	232,4	344,0
performance 2003	268,9	176,4	218,3	214,1	194,5	339,1
performance 2004	265,9	164,0	186,0	206,3	186,8	346,0

Table 18, Efficiency , number of passenger kilometres per vehicle hour (relative)

	all cases	tendered in 2002	tendered in 2003	tendered in 2004	tendered in 2005	not tendered
performance 2002	100,0	100,0	100,0	100,0	100,0	100,0
performance 2003	97,13%	63,70%	78,84%	77,32%	70,26%	122,47%
performance 2004	96,05%	59,22%	67,19%	74,50%	67,48%	124,96%

Overall efficiency is declining from 2002 on to 2004. This is not unexpected since we already ascertained that demand is falling and supply rising. However the trend in the tendered cases is not distinct from that. On the contrary, the concession tendered in 2002 are performing even worse.

However, it is very hard to reach a sound conclusion on cost recovery with respect to tendering. It is after all possible that the extra supply the companies offer bring no extra costs or expenditures to the PTA's. In other words they get more supply for the same (and sometime even less) money. The data in the used data set is not detailed enough to get prove of this possibility. However consequential indications confirm this trend (for instance this was the case in the tendered concessions 't Gooi, Haarlem-IJmond en Almere. Also the mid term evaluation of the Passenger Law 2000, reports in the tendered cases a decline of the average cost of a vehicle hour of 7%, Berenschot, 2004).

5.2 Secondary effects

5.2.1 Planning function

In earlier work of the authors (Mouwen, 2003.) a number of regulative regimes is defined. One of these regimes is public tendering. In that regime government has to define the terms of requirements for a service. There are three types of tendering:

- (a) operational franchise: government owns both infrastructure and rolling stock and gives these assets in loan to the operator who only has operational risks. In this regime government has the initiative. It makes it possible for government to level market barriers by preventing sunk cost to become a barrier for entrance to the market.
- (b) exclusive concessions: potential public transport-operators have to compete for the exclusive right to operate that service for a given period of time. After the tendering a temporarily monopoly exists. Companies that subscribe for the concession can be either private or public.
- (c) granting non-exclusive concessions. In that case more than one (but a limited number) operator acquires the right to operate a certain service for a given period. Customers have freedom to choose between either operators²,

In the Netherlands it was decided that type (b) had to be implemented. To give more substance to the regimes, in table 1 they are specified at three layers. These are the layers where managerial freedom exposes itself:

1. Strategic level: the topics on this level concern policy definition and decision making. At this level the objectives of public transport and global definition of the network is defined.
2. Tactical level: based on the objectives where the level of service (operations) is defined, including the accompanying assets such as vehicles, personnel et cetera
3. Operational level: operations itself, tariff collection and sales et cetera

It is quite clear that function 1 belongs to the responsibilities of government (in Holland the regional PTA's) and function 3 to the operators. Not only in the Netherlands, but all over Europe ongoing discussion takes place concerning the responsibilities on the tactical level (see for instance Isotope, 1997 and Maretope, 2002). The Transport Law 2000 states that public transport is a market where operators have to get freedom of action so to produce products and services that meet the demands of passengers and it that way acquire passengers. Freedom of movement on the tactical level is of utmost importance for positioning the public transport products. On that level fares are defined, network and routes are planned and the level of service is defined. Because of the regime chosen in the Netherlands the competent regional authority has the overall responsibility and therefore decides whether the planning function is positioned with the operator or with the PTA itself.

As part of the mid term evaluation of the Passenger Transport Law 2000 (Berenschot, 2004) the positioning of the planning function is researched. In more than 81% of the tendered cases the planning function rests with the PTA. So this is in clear contrast with

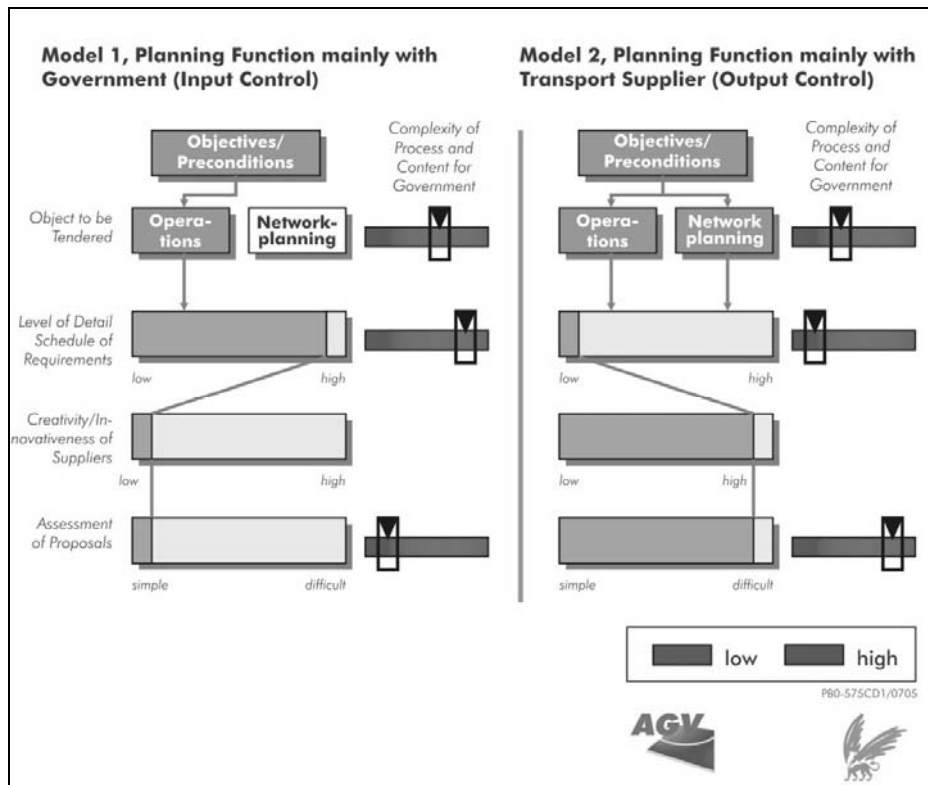
² In real world public transport this regime does not exist very often, so in the empirical section this regime is omitted

the intention of the Law. Remarkable is that in the control group of not tendered cases only 65% of the PTA practise the planning function. Reasons for this behaviour are:

- If the contract is allocated without tendering, PTA have more freedom to negotiate with the PTO on the level of service
- Risk averse conduct of PTA's. Especially in the first tenders PTA's are not sure what the outcome of the competition and tender process will be and seek certainty in defining product specifications them selves.

PTA's that practise the planning function themselves need to specify product definitions and specifications in detail. This results in a detailed Terms of Requirements that leave hardly any room for creativeness of suppliers/operators. This way of acting of PTA's on the other hand facilitates the process of assessment of the proposals. This model of input oriented control is confronted in illustration 4 with the extreme opposite, namely output oriented steering.

Illustration 4, Two models of control



In the period after the mid term evaluation research, the authors witnessed an ongoing trend for competent authorities to perform the planning function themselves. Forthcoming in depth research of the authors compares in detail a number of cases, that differ in the positioning of planning activities and try to link that to the outcome of the tendering process.

5.2.2 Allocation of risks

The allocation of risks between the operator (OP) and the Responsible Authority (PTA) is analysed. The PTA has to decide on how to allocate the division of the risks associated with public transport between the OP and the PTA itself. There are two main risks associated with public transport, i.e. risks concerning operating costs and risks concerning revenues. The allocation of risks is formalised in a contract between the OP and the PTA. We distinguish in this respect three types of contracts (see table 19).

Table 19, Types of contracts and allocation of risks

contract type	management contract		gross cost contract ³		net cost contract ⁴	
	PTA	OP	PTA	OP	PTA	OP
risks						
costs	X			X		X
revenues	X		X			X

In the situation that the operator bears the risk of revenue, the operator is stimulated to improve the quality of service thereby increase fare box revenue and thus make more profit.

Results of the mid term evaluation (Berenschot, 2004) showed that in 75% of the concessions tendered revenue risks are the responsibility of operators (net cost contracts). In the non tendered concessions this is 65%. The authors witnessed in the period of time after the mid term evaluation a trend that more and more PTA's take the revenue risk back (gross cost contracts). This seems not logical but is consistent with the perceived trend of more control over the planning function of PTA's.

6 MARKET ACCESS

In this chapter market access is put central. We shed light on the aspect whether the Dutch BTM market is really an open market.

6.1 Total BTM market

In the pre tender phase (before 2002) the market in the Netherlands is dominated by only a few players. The regional market is dominated by the Connexxion Holding, the big municipal markets by the municipal companies. In 2001 Connexxion –directly or by means of their subsidiaries possessed 50 out of the 71 concession areas.

Upon mid 2005 44 BTM concessions where tendered. Ten (10) out of these 44 concessions shifted from the incumbent operator to another new company. Does this imply that competition is vivid? The answer to this question is negative. PTA's have in practise relative little choice. In the greater part of the cases (more than 80%) only the three big contenders did place a bid. These already existing 'ABC companies' (Arriva, BBA/Connex, Connexxion) share the market. Until now no foreign new operator has entered the contestable market. Also hardly any competition from adjacent sectors such as taxi or coach operators occurred. In some instances the combination of SVN (Novio, HTM and

³ also called minimum cost contract

⁴ also called minimum subsidy contract

Volker Wessel (private engineers) appears on the market. But till now they managed to win only one concession (Utrecht Oost). The taxi operator TCR managed to win the bid of the very small concession of the northern isle Vlieland. The newcomer from native soil MTI is already bankrupt.

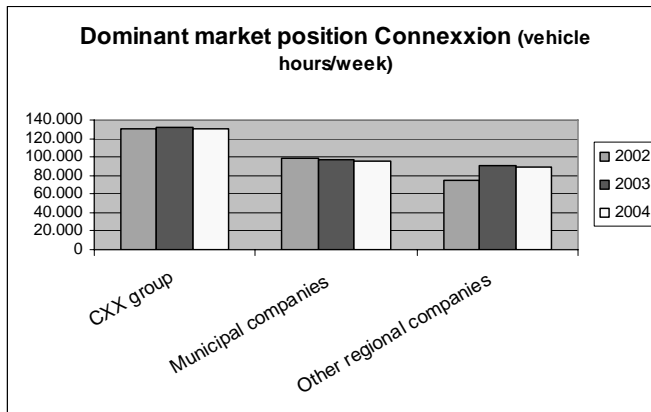
Hopefully after 2007 the number of Dutch players will increase because from that moment on the municipal companies may compete for a concession outside their own municipality.

In table 20 and illustration 5 aggregated market shares are presented. In appendix 1 and 3 the shares for all companies are included.

Table 21, Market shares, total market

	passenger kilometres				vehicle hours		
	2001	2002	2003	2004	2002	2003	2004
Connexion group	41,4%	42,9%	40,5%	38,3%	42,8%	41,2%	41,3%
Municipal companies	37,1%	38,1%	39,2%	41,8%	32,8%	30,6%	30,4%
Other regional companies	21,5%	19,0%	20,3%	19,9%	24,5%	28,3%	28,2%
	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Illustration 5, Market share Connexion dominant



6.2 Contestable BTM market

The Minister defines the contestable market as the market without the municipal companies. On the contestable market the share of the Connexion Holding is diminishing but still considerable (60% in 2004). In absolute terms on the contestable BTM market Connexion loses between 2004 and 2003 3,4% points market share in passenger kilometres. Measured in production volume the picture is less dramatic.

Table 22, market share, contestable market

	passenger kilometres	vehicle hours
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	2001	2002	2003	2004	2002	2003	2004
Connexxion group	65,9%	69,3%	66,6%	65,9%	63,6%	59,3%	59,4%
Other regional companies	34,1%	30,7%	33,4%	34,1%	36,4%	40,7%	40,6%
	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Furthermore it is striking that Connexxion loses market share especially in the first years of tendering. Probably the company was not fit to market conditions and the different demands that were imposed on her organisational structure. The learning curve of Connexxion however is steep. In this first years the bids were accounted for under the responsibility of the regional Connexxion -directors. In the latter years the Holding took over this work and formed a specialised tender team that assists the regional teams. This did work much better: the Connexxion concessions that came on the market in 2004 (Connexxion is incumbent) were all kept by Connexxion.

Market share of CXX in vehicle hours (proxy for turn over) declines from 69,3% in 2002 to 59,4% in 2004. However conspicuous is the observation -if the definition of contestable market by central Government is used (i.e. excluding the municipal market)- that the Connexxion Group still holds more than 50% market share, and therefore in the definition of NMa (Regulative body) has a dominant market position that may hinder competition. In the next chapter we come back to that.

7 CONCLUSIONS

In this paper we evaluated ten new legislation on public transport and especially those articles of the Law that are aimed at enforcing competition by means of tendering of concession areas. Evaluation at this moment in time can not be conclusive. The experiences with this new instrument are to short for that. However at this moment some preliminary conclusions can be drawn and some suggestions for further research postulated.

Customers

It seems an if small companies are better able to react adequate on changing demands of customers than the big ones. The average customers assessment of perceived quality for the small ones is relative good.

Government goals

End of year 2005 65% of non municipal concessions representing 65% of turn over is tendered. Competent authorities expect to tender in 2006 11 more concessions. The expected outcome January 2007 is thus that 53 out of the 66 non municipal concessions will be tendered, representing 91% of vehicle hours (turn over). The goal of the

Government (100% of the contestable non municipal market tendered by January 1st 2007) is within reach.

Striking is the growth in supply for the concessions that were tendered in 2003 and 2005. They show a significantly higher BTM supply than the group concessions not tendered. We conclude from this and from detailed analysis of granted bids and contracts of specific tenders that tendering has a positive effect on supply. This effect is partly initiated by the PTA's themselves. If PTA's ask for more supply, operators encompass this in their bids and offer more supply (higher frequencies, longer operating hours etc.).

So supply is rising due to tendering. However demand is constantly falling in almost all cases (even the tendered ones). So it seems that the possible positive effect of tendering on public transport use is not strong enough to compensate for this overall declining trend.

Operators

Because of falling demand and rising supply, overall efficiency is declining from 2002 onwards.

Upon mid 2005 44 BTM concessions were tendered. Ten (10) out of these 44 concessions shifted from the incumbent operator to another new company. This does however not imply that competition is vivid. PTA's have in practice relative little choice. In the greater part of the cases (more than 80%) only the three already existing big contenders did place a bid.

On the regional market the share of the former monopolist Connexxion declined from 69,3% in 2002 to 59,4% in 2004. The question is whether this is a dominant market position. Ongoing research of the authors focus on bottlenecks for market access. They investigate inter alia the existence of economies of scale, inclusive of what is the optimal size of concession areas and information asymmetry between PTA's and operators.

Finally the authors recommend that the effects of tendering are kept under close monitoring.

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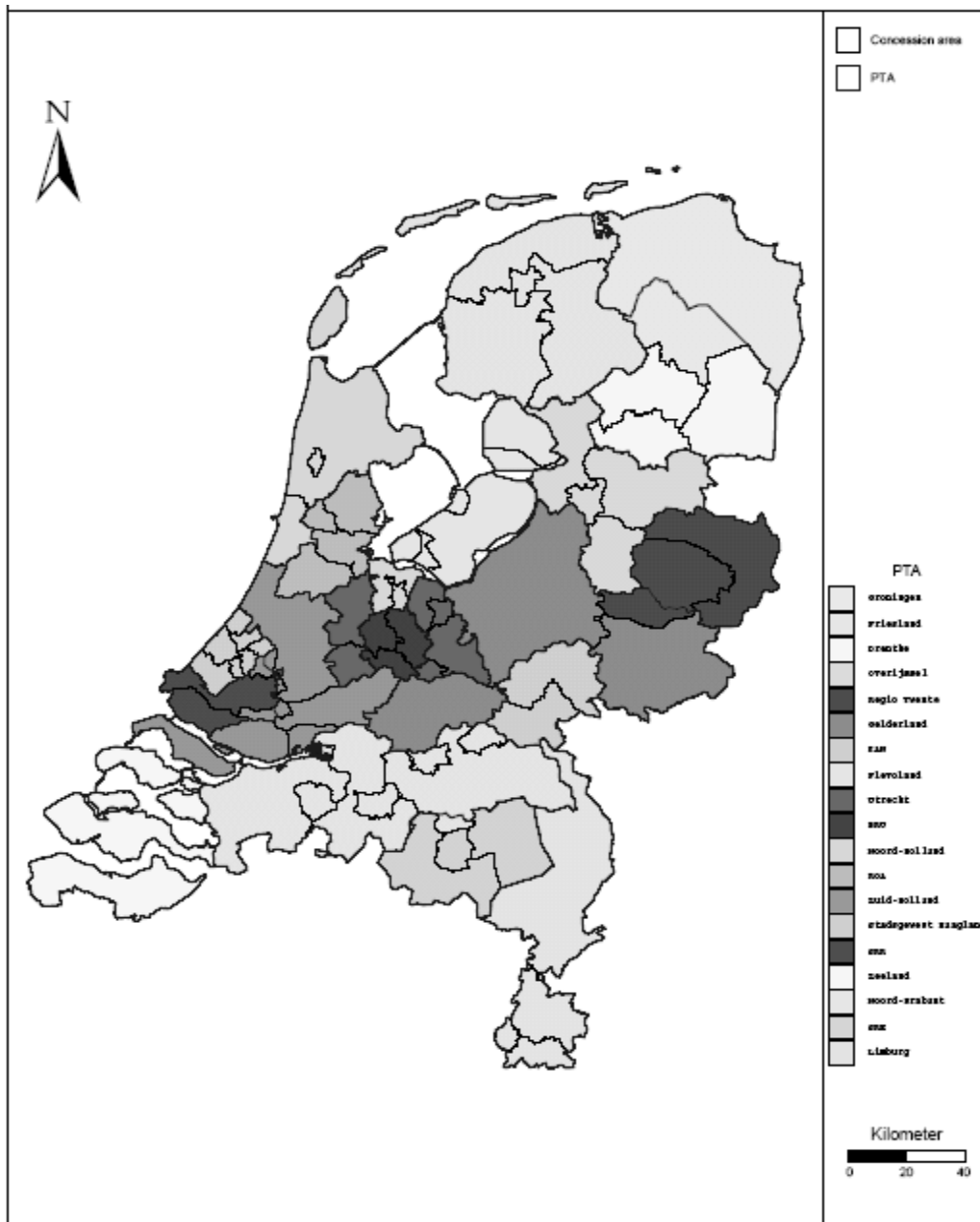
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Appendix 1, Detailed figures per operator

	Passenger kilometres				market share (veh.hr)	Vehicle hours			Quality assessment				Efficiency(pass.km's/ve h. hr.)		
	2001	2002	2003	2004	2004	2002	2003	2004	2001	2002	2003	2004	2002	2003	2004
Connexion	1855297160	1658530565	1611906696	1475101892	35,6%	11112 0	112851	111773	6,67	6,55	6,74	7,03	298,5	285,7	263,9
BBA Connex	267741917	221900504	240193722	225631692	8,1%	24399	25514	25385	6,99	6,76	6,86	7,17	181,9	188,3	177,8
Arriva	408400898	300322088	339792654	328444004	10,7%	26449	34370	33692	6,80	6,78	6,98	7,20	227,1	197,7	195,0
Hermes Connexion	131106584	141569077	125092808	125594403	5,8%	18611	18468	18081	6,86	6,57	6,88	7,18	152,1	135,5	138,9
Syntus	95669811	81425924	78241423	71463155	2,1%	4015	5547	6534	6,92	0,00	0,00	7,19	405,7	282,1	218,8
Noordned Arriva	90398480	75176815	71400030	76535483	1,9%	4380	6119	5878	6,75	6,65	6,95	7,28	343,2	233,4	260,4
Stadsvervoer Nederland	0	0	0	0	0,0%	0	0	0	0,00	0,00	0,00	0,00			
Novio	125448414	76829408	76858440	65883176	2,4%	7769	7892	7473	7,26	6,69	6,74	7,25	197,8	194,8	176,3
Limex (Connex)	0	0	19539949	19130223	0,4%	0	1261	1237	0,00	0,00	0,00	7,42		310,0	309,4
Taxicentrale Renesse	0	0	0	0	0,0%	0	0	0							
GVB Amsterdam	728708424	657774349	704928263	704419975	12,8%	39719	39053	40284	6,85	6,55	6,87	6,91	331,2	361,0	349,7
HTM	314961452	285223515	304764139	302421634	6,5%	27308	21268	20349	6,71	6,48	7,10	7,26	208,9	286,6	297,2
GVU Utrecht	116786416	116534923	107215073	104788372	4,5%	9958	14374	14048	6,51	6,64	6,77	7,23	234,1	149,2	149,2
RET Rotterdam	615884708	542456663	566233001	634685812	6,7%	22410	22795	20912	6,75	6,31	6,37	6,80	484,1	496,8	607,0
Stadsbus Maastricht/Connex	22897577	25996610	24082922	25077795	1,3%	3921	4084	4096	6,74	6,92	6,98	7,37	132,6	117,9	122,5
SVD (HTM)	19018079	16741923	16363243	16069971	0,8%	2670	2916	2609	7,39	6,87	6,76	7,52	125,4	112,2	123,2
Area (Maaskant)	0	0	0	0	0,0%	0	0	0	0,00	0,00	0,00	0,00			
MTI	0	439350	2995592	1716057	0,6%	734	2504	1779		7,50	7,50	6,80	12,0	23,9	19,3
Totaal	4792319919	4200921714	4289607954	4176963643	100,0%	30346 2	319016	314128	6,80	6,60	6,90	7,10	276,9	268,9	265,9

Appendix 2
Competent authorities, 2004



Appendix 3, Market position

