10 AMSTERDAM FERRY SERVICES

10.1 THE KEY ISSUES ADDRESSED BY THIS CASE STUDY

The key issues addressed in this case study specifically address the integration of high speed ferry services into the regional transport network and also their potential as the interconnection between long distance rail and international ferry services specifically and as the interconnecting mode to international ferries in general. The case study is relevant as public transport in Amsterdam has made continuous efforts to integrate ticketing and fare services, but recent developments and the introduction of new procurement rules have somewhat disturbed previous integration efforts, as new procurement rules are not clear about the role of integration. Thus in the following the evolution of ferry services in a changed environment, especially under the impact of tendering and competition and the resulting question on the "sustainability of interconnectivity" are discussed.

- **Effective integration**. Amsterdam's ferries are all integrated in a single ticket system to improve the accessibility of the public transport system of the Amsterdam region and even at national level. However, the benefits for the transport operators, especially in terms of economic returns are not foreseeable yet. While the use of a single ticket integrates pricing it does not necessarily have the same effect on integration of time tables.
- Private operators also provide their own solutions of interconnection to overcome a lack of multi-modal access as it is the case at the international ferry terminal in Ijmuiden
- **Information and marketing**. Private operators proactively use their website to promote integration and interconnection with other modes, e.g. DFDS promotes access with long distance rail and also using its own shuttle service to interconnect between these two long distance travel modes.

The case study will only briefly discuss the general set-up of other interconnection options in the Amsterdam region.

10.2 GENERAL DESCRIPTION OF THE CASE STUDY

Amsterdam has a population of 743,000 and is the biggest city in the Netherlands. The greater Amsterdam region relevant for this case study has a population of about 1.5 million inhabitants.

The Netherlands and, within this context, Amsterdam are quite often regarded a model regarding public transport and public transport policies. Amsterdam currently runs a campaign with the aim to be a 'sustainable' city. The reduction of transport emissions and smart travel choices are key concepts in this campaign. Public transport seems to be dense, almost ubiquitous and car driving is discouraged in the city centre. The public transport system in Amsterdam includes tram, metro, bus, ferries, water taxis and railway (regional, national and international).

Amsterdam has two rivers and 165 canals; more than a quarter of its area comprises water. Water transport is used extensively for both tourism and local transport purposes – the former largely confined to the canals and the latter to key river crossings connecting different parts of the city especially towards the north, but also as a regional transport option towards Ijmuiden.

Nationwide information on routes, timetables, tickets and fares is available. However the provision of integrated information on regional buses and urban public transport has suffered a lack of completeness and co-ordination of timetables after the introduction of concessions obtained by competitive tendering (WP/Law on Passenger Transport 2000). These procedures and developments limit the transport providers' co-ordination activities in respect to joint information provision and marketing efforts. Tender specifications in the first round of tenders were unclear in what needed to be done in terms of integration. Recent efforts are trying to overcome these restrictions. However, transport operators still primarily market their own services and do not show the interconnection opportunities with other modes or transport providers (see Appendix 2 - GVB maps do not include interconnecting services like the Fast Flying Ferry).

Progressively an electronic payment system for public transport is being introduced (since 2003), the OV[21]-Chip Card (OV-chipkaart), eventually to operate across the whole country. The card can be loaded like a bank card to pay for passenger travel anywhere within the Netherlands. Currently, the system is fully operational in Rotterdam an Amsterdam and is replacing the previous system, the Strippenkaart. This recent development will be discussed in more detail in the solutions section of the case study.

Interconnection is happening in the rail based transport modes in the sense that short and long distance services, metro and tramlines, do not run parallel to the railway network and further physical integration in the way of joined use of tracks is anticipated. The latter would have a significant impact on the close interconnection of short and long distance travel as transit times between modes would reduce at terminals.

At the same time integration with the international ferry terminal in Ijmuiden is not specifically developed and the potential of interconnecting long-distance rail travel with the international ferry services via a local ferry link is not yet explored.

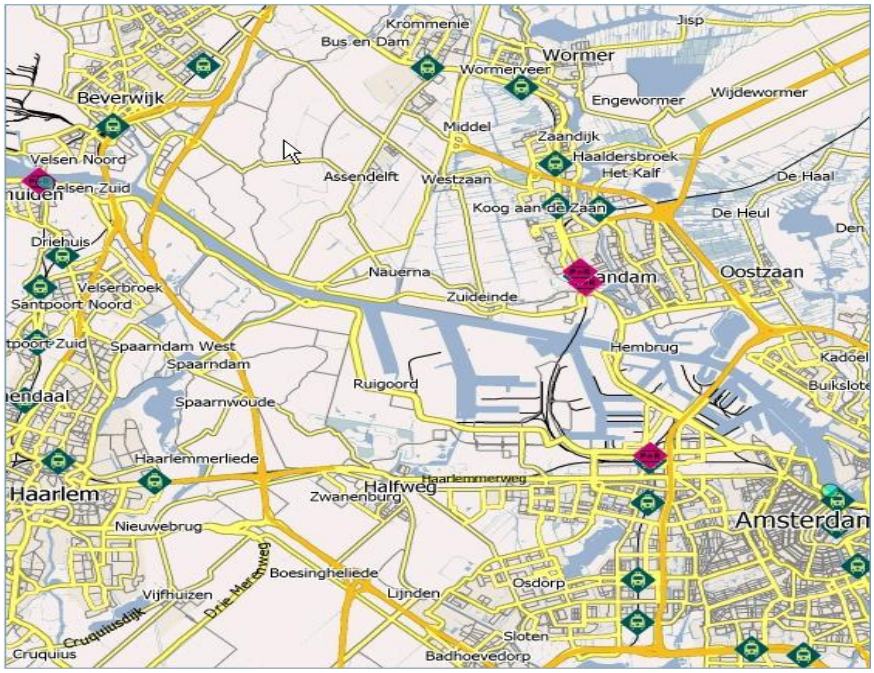
10.3 SPECIFIC CHARACTERISTICS OF THE CASE STUDY

10.3.1 Modes and Infrastructure Involved

The case study puts ferry transport in the centre of the investigation and reviews the interconnection to international ferry services, local ferry services and railway services (regional, national and international) on the one hand and the local public transport system on the other hand.

Consequently, the interchanges between the high speed ferry transport system, also known as the *fast flying ferry*, and the interconnected modes are also analysed. The ferry service is run by Connexxion since 1998 and, after winning the tender in 2007, the same company will continue to operate the service at least until 2015. The service operates along the North Sea Canal between Amsterdam, Centraal Station and Velsen Zuid using hydrofoils with a travel speed of 65 km/h.

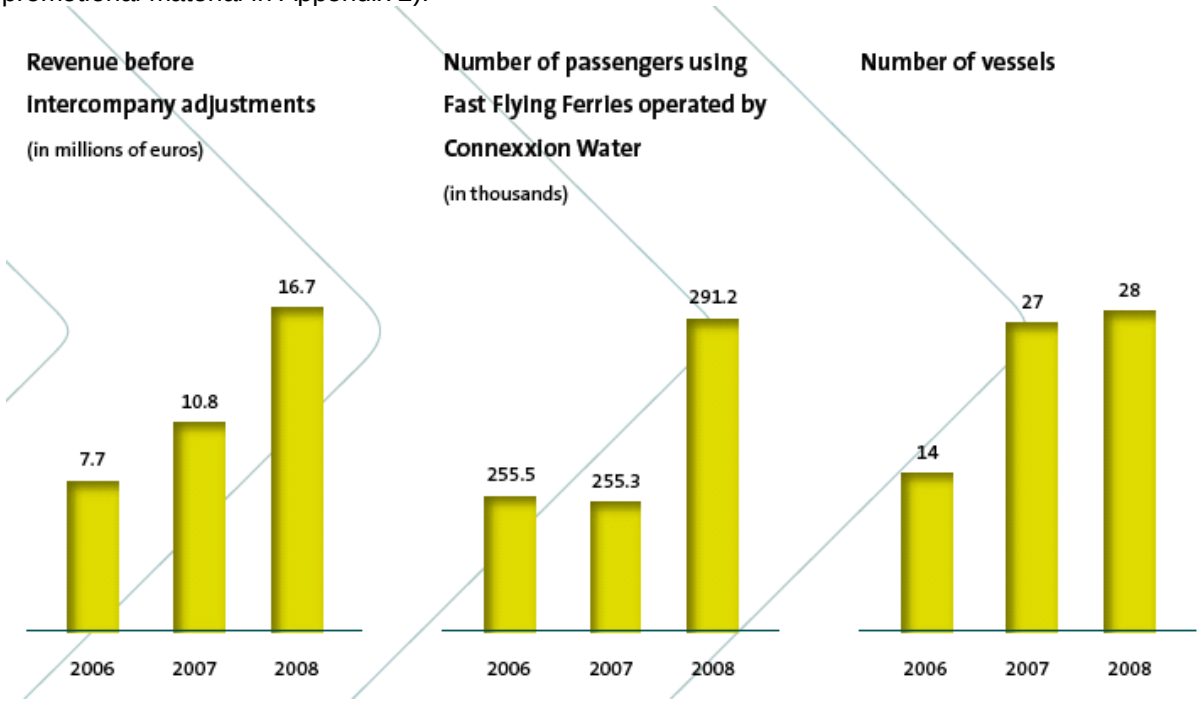
[21] OV stands for “public transport” (openbaar vervoer).



(source: Connexion)

Figure 10-1 The fast flying ferry route in the Amsterdam network and interchanges

The fast flying ferry service experienced substantial growth in revenue and passenger numbers after Connexion won the last concession in 2007. This transport option is now particularly promoted as the connection from the centre of Amsterdam to the beach, thus focussing on leisure traffic (see promotional material in Appendix 2).



(source: Connexion, 2010)

Figure 10-2 The fast flying ferry key performance statistics

10.3.2 Intermodal and Interconnection Opportunities

The Centraal Station is a central hub for bus, tram and taxi services as well as for rail services of different distances and for all ferry services, either GVB operated services or the fast flying ferry (FFF). The current layout allows for a quick interchange between all modes whether short or long distance.

Particular mention should be made of the interchange possibilities with the ferry network, which is relatively uncommon (one other example is Lisbon).

Figure 10-3 Ferry services at the Centraal Station

The port of Zeehaven IJmuiden NV is the only privately owned port in the Netherlands. Set outside the locks on the North Sea Canal, Zeehaven IJmuiden NV offers potentially direct access to the Amsterdam area as well as Schiphol airport (20 minutes by car). The port offers daily ferry services to the UK ports of Newcastle and Harwich, operated by DFDS Seaways.

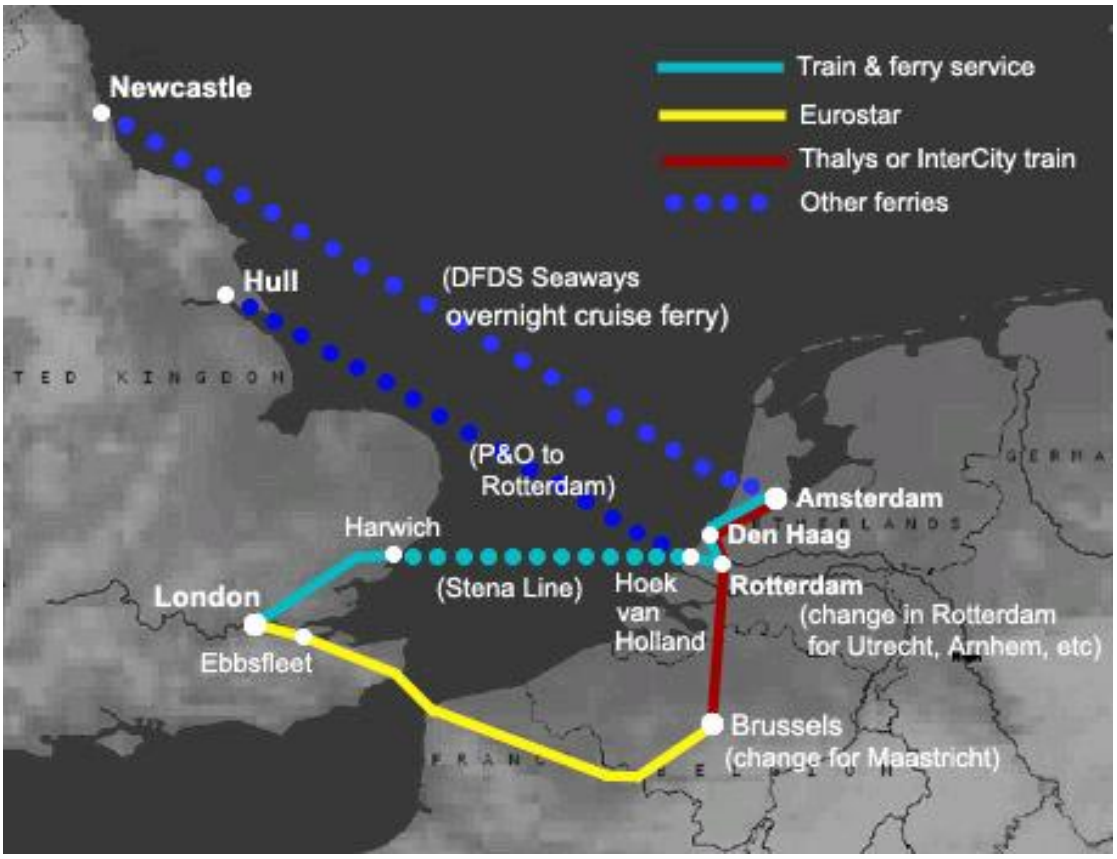


Figure 10-4 Ferry services from Ijmuiden (Amsterdam)

Current integration of the international ferry services at the Port of Ijmuiden can be described as follows. The ferry service operator, DFDS, in co-operation with a local coach firm, provides a connecting coach service between the Felison Terminal in IJmuiden and the Central Railway Station in Amsterdam. The departure and arrival times are directly co-ordinated with the ferry schedule. On days of departure coaches leaves the central station between 15.30 and 16.30. For arriving passengers the service departs from IJmuiden and terminates at the railway station in front of the Hotel Victoria. Tickets can be purchased in advance through DFDS Seaways UK at time of booking. A further option is the use of the public bus services that leave from the bus station in Ijmuiden (not at the ferry terminal) every 30 minutes to Haarlem and every 60 minutes to Amsterdam Central.

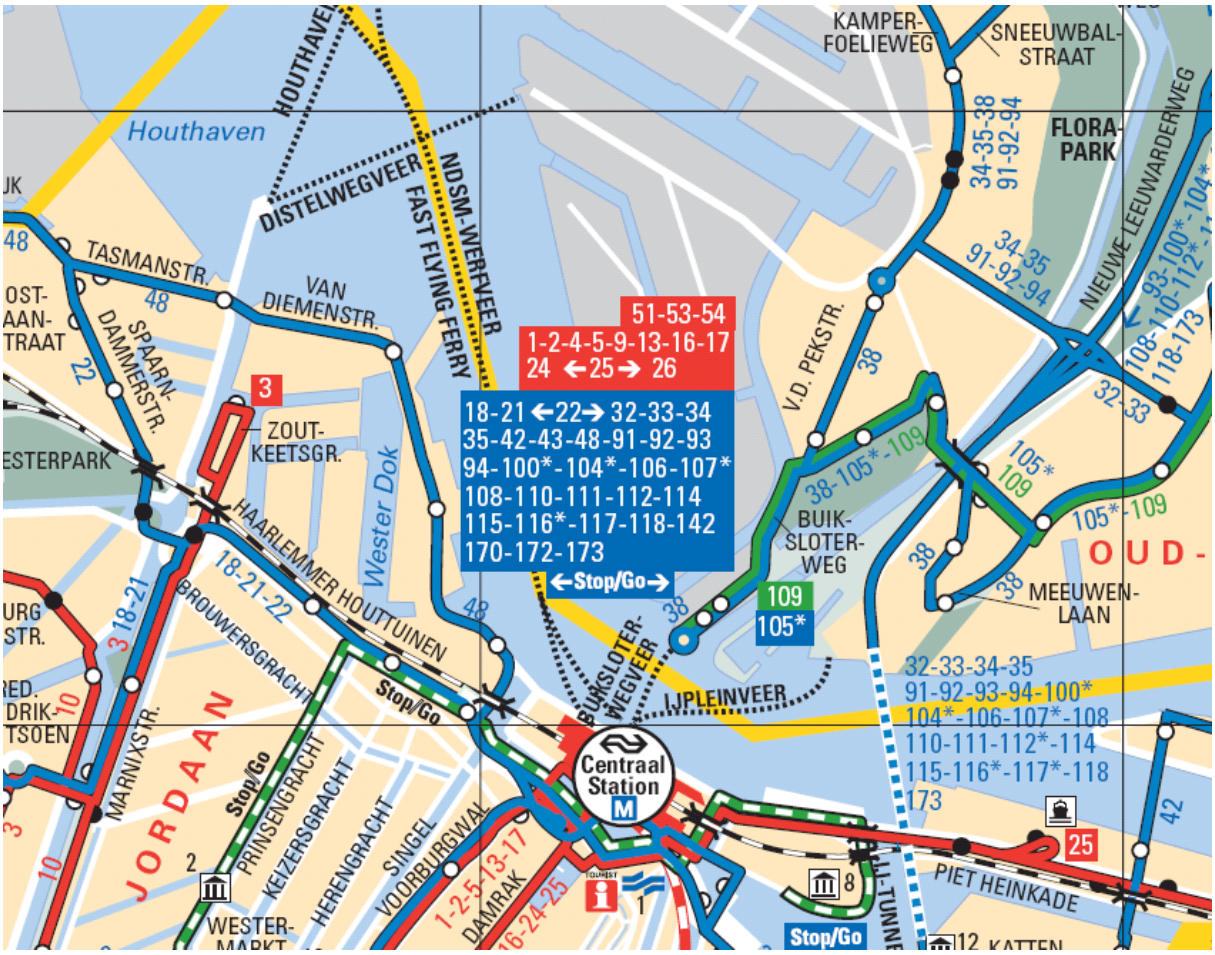


Figure 10-5 Public transport service options at the Centraal Station

The second option is the use of IJmuiden - Amsterdam train connections. These are a less convenient method of transport for getting to Amsterdam city centre, because there is no train station or stop at the ferry terminal. The nearest train station to the IJmuiden ferry terminal is Driehuis, at a distance of over 4km. The station can be reached by local bus services or walking. The journey to Amsterdam Centraal takes around 30 minutes from Driehuis.

The options described above are also marketed by the port and the ferry company. A third option is to use the FFF from Velsen Zuid in IJmuiden, about 4.3 km walking distance from the ferry terminal. The FFF leaves every 30 minutes during the week and every hour on weekends (for detailed timetables see Appendix 2). However this is currently not perceived and marketed as a possible interconnection between the international ferry services and the short and long-distance public transport modes at the Centraal Station. The improvement of this option is a potential solution to improve interconnection and presented as this in a later section of the case study.

10.3.3 Current Integration of Public Transport Services

Current integration in public transport exists by means of joint ticketing and the expansion of the OV-Chip card across the Netherlands and particularly the Amsterdam region. Moreover, integration is also present at the main terminals and where possible offers multi-modal travel options. Integration is driven by the national and regional authorities and their strategic transport development plan. A main driver for interconnection and integration is the set goal to move towards a sustainable society.

From the standpoint of Rover (the Association of Dutch Public Transport Users), leveraging market knowledge, planning experience and co-ordinating passenger transport, is the enabling factor to meet and influence passengers' and clients' expectations. Thus the strategic focus is to provide the best multi-modal transport solutions, ensuring the best connection possible between the various forms of

transport and offering them as an integrated package. From the association's point of view growth in rail transport accompanied by parallel growth offers opportunities for economies of scale and efficiency improvements.

10.3.4 Stakeholders Involved

The Regional Authority of the Amsterdam Region (ROA) is responsible for commissioning public transport in the Greater Amsterdam region. Regulation of water-based activities within the city is managed by Amsterdam City Council and the Port of Amsterdam. The inner area, most frequented by the tourist services, falls to the Council, while there are also interfaces to the local boroughs. The city council deals with navigational, infrastructure, policing and licensing issues via its nautical affairs division.

The ROA is also responsible for planning services and exploration of transport networks. This particularly includes integration and pricing of transport services.

Except for the case of ferries the ROA is also responsible for infrastructure planning and investment and the investment in rolling stock. With the introduction of new procurement role however the responsibilities for investment in rolling stock have been passed to the private operators and the ROA fulfils an advisory functions or sets standards at the tender stage.

Table 10-1 Overview of responsibilities

Metropolitan Transport Authority	Consortium Administration	Responsibilities							Modes
		Planning the services	Exploiting the network	PRICES	Financing the exploitation	Planning the infrastructure	Investments in infrastructure	Investment in rolling stock	
GVBA (Gemeentevervoerbedrijf Amsterdam)	Amsterdam City Council	X	X		X	X	X	X	URBAN BUS
		X	X		X	X	X	X	METRO
		X	X		X	X	X	X	TRAM
		X	X	X	X				FERRY

GVB itself transports passengers in and around Amsterdam on 56 bus routes (including 12 night bus routes), 16 tram routes, four metro routes and five ferry services. The organisation of all these forms of transport within one company allows for a uniform quality within the GVB network.

Connexxion Ferries is part of one of the Netherlands main public transport operators. Besides ferry services Connexxion operates buses and a taxi fleet in the Netherlands. The company was formerly owned by the Dutch government, and was privatised in 2007. Two thirds of the shares are now owned by a consortium comprising the French public transport company Transdev and Bank Nederlandse Germmenten. The rest of the shares remain in the hands of the State. This alliance ranks fourth in size amongst the privately held European transport operators.

Connexxion's vision is to provide services with operational excellence aiming for multi-modality. The company aims at fully integrated transport chains for passengers.

Currently, Connexxion operates the following ferry networks in the Netherlands:

- A super fast ferry service between Velsen Zuid and Amsterdam, long the North Sea Canal. Fast Flying Ferries' hydrofoils operate from Velsen-Zuid (Pontplein) to the centre of Amsterdam

(Central Station) and back within thirty minutes. Velsen-Zuid is close to the international ferry terminal in the Port of Amsterdam.

- The Dodrecht – Rotterdam Waterbus, a high speed hydrofoil service during rush-hour Waterbus (Rotterdam)

The water transport division of Connexxion provides 1% of the total company turnover. Connexxion Water is an independent division of the Connexxion Group. Alongside the FFF the company operates the Waterbus BV in a separate organisational unit.

Private operators like Veolia and Arriva also provide public transport services in the region alongside a group of other small private transport operators.

DFDS Seaways is a private ferry operator providing passenger and freight services across Europe.

10.3.5 Current Cohesiveness of Multi-modal Networks

Provision of integrated networks and services

The cohesiveness of the current networks in Amsterdam is a result of the regulatory set up and the rules and standards put in place at Amsterdam, regional and national level.

All public transport prices for urban and regional transport are set at national level under Articles 41 and 42. This also includes the types of tickets available.

Co-ordination of providers

An industry association, the FMN (Dutch Federation of Mobility Companies) was launched on 10 April 2008. Since then, the founders (Veolia, Connexxion and Arriva) have been joined by Syntus. During the debate on the liberalisation of the public transport market in the three major cities of the Netherlands, such a wide gap emerged between the interests of the commercial operators and those of the municipal transport services that the privately owned parties decided to leave the industry representative body, Mobis. The FMN was set up to improve co-operation among all those involved in providing public transport, to enable problems to be tackled jointly, and to ensure optimum mobility by means of concrete solutions.

Co-operation between authorities and providers

The regional public transport market was liberalised in 2001 in the Netherlands and has grown significantly. At the same time the public transport market in Amsterdam, as in other principal cities in the Netherlands has not yet been opened up to direct competition, and the tendering criteria set by lower-tier authorities are becoming increasingly complex. Many contracting authorities express the wish that new vehicles be put to use at the beginning of a new concession period.

The combination of market forces and public tendering procedures can constitute a risk to the growth ambitions of private sector, public transport sector and small-scale transport services. Success or failures in public tenders can have a significant impact on market shares of companies and thus their revenue streams and return on investments. Competition in the public transport sector is set to increase with the possibility of a new operator entering the market through tenders. Local transport concessions for the three main metropolitan regions (Amsterdam, Rotterdam and The Hague) do not underlie the strict European procurement rules. This ruling has created a wide variation of submitted tender offers for both public and small scale transport. While the entrance of new providers can be an effective tool to reduce costs and improve services, it also bears a risk of a reduction in integration and interconnection as new entrants will have different concepts and strategies for co-operation and competition. The introduction of tendering has also led the main transport providers to set up specialist professional tendering teams.

The gaps and inconsistencies in strategic planning processes

The strategic planning process in Amsterdam and the Netherlands in general operates at a very high level and consequently pursues new improvements. However, specific emphasis is given to the development of rail services. And while terminal integration at airports e.g. Schiphol, has been fully developed, the links between the public transport system and international ferry services is not addressed strategically.

Investment, technical innovation

Investment in technical innovation is pursued in two areas; the most relevant at this point in time being the introduction of the OV-Chip card and therewith the complete alteration of the previously existing ticket system. Secondly, the implementation of innovative technology is being driven through requirements in tender processes.

With the focus on ferry services the different technologies used to provide ferry services using conventional ferries to hydrofoil is relevant as it determines the contribution of these services to the overall goal of a more sustainable society which is among other areas based on sustainable transport.

Capacity of infrastructure

The selection of stops was based on commuter flows and potential attractiveness to tourists as well centrality and accessibility of other public transport modes is particularly interesting the case of the FFF and its role in the public transport network. This is especially true in the centrally directed development vision. One question that remains is whether a service like the fast-flying-ferry can really play a role in connecting two long-distance transport terminals (namely the central railway station and the international ferry terminal.

Travel information and harmonised pricing

Ticket and fare integration is complete between the city buses, trams, metro, regional buses and recently the ferry services, and even the regional buses entering from neighbouring authorities. One ticket, the OV-Chip card, now replacing the Strippenkaart, is valid for both public and private operators, within a certain time period and zone. The regional trains though are only partly integrated in this system as the OV-Chip card is valid in the urban and a limited part of the suburban areas. On the other hand, regional train tickets are not valid on the other PT modes.

10.3.6 Targets to be Achieved

- Analysis of the potential to use high speed ferry services to link to long-distance travel modes (international ferry and rail)
- Analysis of the regulatory environment in terms of pricing on interconnection of modes.
- Evaluation of the evolution of ferry services in a changed environment especially under the impact of tendering and competition. → the question of "*sustainability of interconnectivity*"

10.4 SOLUTIONS ALREADY IN PLACE

10.4.1 Overview

In order to facilitate the understanding and comparability of the solutions already in place the following refers to the solutions identified in milestone IC M3.3, the draft toolkit . The key categories of solutions relevant for this case study are new/improved interchanges, integrated ticketing and information and marketing. From these three categories the following solutions exist:

- Improved interchanges – intermodal ferry terminals
- Integrated ticketing
- Information and marketing

The solutions in place will be described by category and specific reference will be given to the relevant solutions. If the solutions are not listed in the categories these will be referred to as evidence of potential good practice. Where possible the solutions will be assessed against the performance criteria as set out in the draft toolkit.

Existing solutions that are outside the core scope of the case study will be mentioned, but not discussed in detail. Wherever possible reference will be given to work or studies presenting these practices.

10.4.2 Integrated Ticketing

In 2003 the Netherlands decided to switch to single smart card ticket system for all types of public transport: for train, tram, bus and underground, in the cities, regionally and nationally. The first trial-implementations started during 2004 in the Rotterdam and Amsterdam subway, on the rail line Hoek van Holland-Rotterdam Centraal and on some bus lines of Connexion. Nationwide coverage and replacement of the old ticketing system, Strippenkaart is planned; according to the current planning, the OV-chip card will be functional in the whole country by the beginning of 2011. As of that date all travellers will use the OV-chip card on all public transport modes in the Netherlands, including the regional and national railways. It is expected that the system will process about 1.5 billion trip-transactions per year after full implementation.

As of June 3 travel on public transport in the Amsterdam region is only possible using the OV-Chip card. There are three different types of OV-chip to choose from:

1. The Personal OV-Chip card: can be purchased any public transport company or from the Customer Service Department
2. The Anonymous Card: designed for the infrequent traveller and allows the holder to travel immediately. It can be purchased at the ticket office and vending machines at the station.
3. The Disposable Card: can be purchased at the station vending machines. This card allows for immediate travel, but cannot be recharged or loaded.

Figure 10-6 The OV-Chip card

(source: GVB)

Figure 10-7 The personal and anonymous OV-Chip card

The OV-Chip card must be purchased before travel and its price is determined by the company selling it. Additional credit can be loaded onto the OV-chip card at vending and add value machines or sales and information points.

Problems addressed

The OV-chipkaart is a major innovation in public transport and will completely replace the national multi-journey bus and tram ticket known as Strippenkaart, used for the last 30 years. The OV-chipkaart increases passengers' convenience and therefore access to transport. Connexxion continued to drive forward the roll-out of the OV-chipkaart vigorously in 2009. The main arguments in favour of the system are its interoperability on all Dutch PT-services, the possibility to vary tariffs (e.g. for peak load pricing) the lowering of thresholds to use all PT-systems, the possibility to enlarge usability to other related products or adjacent services, the possibility to close platforms or vehicles for fare dodgers, improved social security, less payments on the vehicle resulting in shorter halts on stops, the possibility to gather information about line operation (via GPS), vehicle occupation, passenger flows, exact data for dividing traffic revenues between operators etc.

On May 29th 2010 the sale of the previous tickets – the Strippenkaart - was suspended.

Performance against main toolkit criteria

Cost

The introduction of the system for the public and private sector providing public transport services is estimated to cost € 1 billion.

The trip cost, based on kilometres travelled, is deducted from the balance on the card on checking out. The passenger has to check in and out each time he switches vehicles. These check-in and check-out transactions are processed in a central system, which also takes care of settlement between the carriers. Instead of travelling with a balance on the card it is also possible to put "travel products" on the e-ticket, which give certain travel privileges, and which are, therefore, recognised at the check-in and check-out phase. For passengers the base rate in Amsterdam is 78 cents (52 cents reduced rate). The kilometre rate is 10.4 cents (6.8 cents reduced rate) in 2010.

Technical feasibility

Trans Link Systems, a partnership of NS, Connexxion, RET, HTM and GVB was set up to develop a chip card for generalised use in the Netherlands. The overall goal is the implementation of a robust and future-fixed system of electronic public transport tickets for the benefit of a customer-oriented, safe and cost-effective provision of services by the public transport companies to passengers. The system builds on the Philips MIFARE contactless smart card interface platform.

In 2008 the first transport operator of the funding group left Trans Link Systems (TLS), leaving the other shareholders to take the 20% interest held by Connexxion. This decision is seen as a step to make the smart card producer more independent.

The chosen system is also being used in Hong Kong, but had to be rebuilt according to very complicated and continuously changing specifications; this also being one of the reasons for the delay in introducing the system. Further, additional providers were allowed to join the development group

and produce the system, despite the fact that these suppliers could provide matching and compatible technological solutions (e.g. cards, vending and recharging machines); this did not result in fewer technical problems. The only positive effect reached was greater competition.

The setup of the technical system could also be simpler: the multi-staged architecture, in which the carriers manage their own back office, linked to a central system, should be discouraged. One central back-office in which all information is safely processed is to be preferred, even more so now that it has turned out that carriers are not allowed to use the individual travel data for commercial ends, because of the law on privacy.

Financial feasibility

In 2008 the Kist Committee compared the extra costs associated with the development of the card with the cost/benefit to society analysis performed in 2005, and concluded that the additional costs already incurred amount to at least € 100 million for all operators. The same committee also estimated that the additional costs for the period starting in 2008 were to amount to approximately € 18 million a year.

The financing of the OV-chipkaart is still much-debated at a national level, and within transport companies. The contributions made by central government to local governments for the migration to the OV-chipkaart are not sufficient to cover the additional costs (and reduced income) generated by decisions made outside the span of control of the transport companies. This was confirmed by the Kist Committee concluded in 2008 and 2009.

In response to the committee's report, the State Secretary (Vice Minister) for Transport, Public Works and Water Management incorporated a number of arrangements in a new plan of action. However, transport companies still run a substantial risk with respect to financing the public transport smart card system.

The political debate surrounding the introduction of the card and the postponement of the original introduction date 2006/07 has resulted in two separate ticket distribution systems operating in parallel, resulting in a doubling of maintenance costs and delaying potential growth in passenger numbers as a result of the convenience offered by the card.

Revenue is distributed on the basis of actual passenger revenue rather than on the basis of calculations made in accordance with the WROOV system[22]. This changeover constitutes a revenue risk for the transport service providers. This risk is mitigated by additional agreements between the transport providers and the contracting authorities on revenue neutrality for a fixed period following the introduction of the card.

It is feared that, although cost benefit studies indicate profitable results, price differentiations should lead to higher tariffs which could be linked on the huge introductory investments.

Organisational/legal feasibility

The organisation and implementation of the new ticket system has involved a significant number of stakeholders.

- The ministry of Transport main financing body
- Provinces and city regions: for drawing up and adjusting contracts with the transport service providers regarding the implementation of the new system (i.e. changes in the system of revenue distribution),
- Transport operators to implement the new ticket, which is not their core business,
- Consumer organisations to evaluate the consequences of the OV-Chip card for the traveller,
- Passengers as the part of the system that has to adjust to its usage and a new way of paying for their trips,

[22] www.wroov.nl

- Trans Link Systems (TLS): to specify the technical aspects of the system, including the clearance of revenues and issuing E-cards,
- Suppliers of E-ticket equipment: have to adhere to the specifications and need to be certified,
- De Nederlandse Bank (the Dutch National Bank): to authorise TLS to manage the "float" of outstanding balances as a banking institution,
- The Dutch Data Protection Authority (College Bescherming Persoonsgegevens): to monitor the level of security regarding personal data,
- Technical institutions: to test the electronic security of the OV-Chip card

Overall nine public transport carriers and their 19 contracting parties (regional public transport authorities) were involved to determine the issues related to the introduction of the system for more than 60 regions (concession areas) across the Netherlands. This included tariffs, travel products, communication campaigns and recharging locations. While a nationwide agreement was reached a national organisation could have been more effectively in developing the system. Further, the principal discussions among the involved parties were of technical rather than organisational and strategic nature.

Transport service providers, such as Connexxion, have established an increasing number of shops across the Netherlands as distribution points for the OV-chipkaart. This includes contracts with several shopping networks and the setting up of distribution points in related shops, where passengers can purchase and activate their OV-chipkaart and transfer credit or a travel product on to the card. In addition, buses and the FFF terminals are equipped with 'collection' and 'charging' points, where passengers can collect travel products ordered via the Internet and can credit their OV-chipkaart.

The used structure restricted the involvement of passenger opinions in terms of equipment design and handling, recharging services and tariff structures.

Acceptance by users

The OV-chip card was introduced on only a limited scale in 2008 and until this point in time has not had any impact on passenger numbers.

Other aspects of political acceptability

In the Netherlands the public transport carriers run so-called concessions. These are areas where the right to offer transport services during a number of years against a certain compensation from the regional government has to be acquired by means of a tender procedure. The carriers are tasked with the responsibility to implement the e-ticketing system in the areas where they offer transportation; the cost of this implementation is borne by the regional governments: 12 provinces and 7 city regions.

The implementation of e-ticketing in the Netherlands is wholly regionalised to the 19 regional governments. Strictly speaking the Ministry of Transport is only involved in the implementation of e-ticketing for the National Railways (NS), and in giving permission to abolish the current paper tickets. It also grants subsidies to the regional governments with which they can pay for the implementation of e-ticketing.

The agreements on the implementation of e-ticketing are settled in contracts between the regional governments and the carriers. The e-ticket is gradually being implemented in the Netherlands. The conglomerates Rotterdam and Amsterdam together with their surrounding regions are first. In Rotterdam the underground has only been accessible for e-ticket holders since the beginning of 2009, in Amsterdam this will happen within half a year. In the rest of the Netherlands the e-ticket will be introduced during 2009 and 2010 and the paper tickets will be discarded.

While operators in the region where already prepared to make the shift to the new check in - check out system, earlier, the full blown market entry was dependent on the results of a survey ordered by the Parliament on the effects on prices of the general use of the new OV-chip card. This specially installed commission approved the decision-making process and stated that the calculation to ensure a so-called cost neutral tariff system in the Stadsregio had been thorough and robust. Stadsregio and its

operators are now working on a comprehensive and full-scale information process to make sure everyone in the Stadsregio using public transport is fully informed and availability of the OV-chip card is maximised.

Impact on users' door to door travel time

The transport provider Connexxion has combined the functionality of a smart card and Infoxx, an innovative system for supplying real-time travel information both on board buses and at bus stops. Infoxx is also used for enabling communication between vehicle drivers and the traffic control centre. In 2008, the Connexxion bus fleet was fully fitted with Infoxx and OV-chipkaart equipment. This information service can have positive impacts on door to door travel time.

Impact on users' door to door travel cost

Incorrect use of the check in-check out system results in additional travel costs. In this case the maximum fare of € 4.00 instead of the actual trip fare.

Initial impact on comfort or convenience

A personal smart card can be obtained through written or online applications (ov-chipkaart.nl). The anonymous smart card can be bought at the sale and charge machines at the subway stations and stops in Amsterdam, the service Tickets & Info CFP, the Arriva store in Purmerend, and in one of the more than 250 stores. A mobile phone address finder has been created to enable users to identify their closest distribution point.

The option of automatic recharging, adds to the convenience for the user, but like any other automated systems also needs to be monitored by the user.

However, underlying the supposed convenience a number of issues have been found that impact the comfort, convenience and thus also the acceptance of the new system. These include:

- The card cannot be loaded at a bank.
- Why do the new machines have different designs when they are fulfilling the same purpose and function?
- Passengers access differs particularly at railway stations and can either be through gates for check-in and check-out or with check-in and check-out on board without passing through gates.

Even when staying with the same transport interchange, but changing the transport service provider the passenger needs to check in and out. This means that he will also have to remember his actual transport provider for each part of the trip.

In the charging summaries different kilometres along a tip can be found, which reflects the old zone system, but is not as transparent.

The reason for this diversification and complexity originates from the fact that the 19 regional governments have the right, as public transport authorities, to retain their own tariff structures.

The initial impact is primarily related to passenger getting used to the check-in – check-out system with the new card and acceptance of the new system in general e.g. loading of the card or effects or cost implications, if not checking out. The transition time includes a dual phase of over a year that shall allow travellers to purchase either a personalised or an anonymous smart card to pay for their public transport travel.

Infrequent travellers, such as tourists, will still be able to buy a single fare ticket on the bus or tram or in the metro station, next to the option to purchase a multiday ticket (24/48/72/96) through ticket offices and within larger hotels.

Personal security

The new system works in accordance with Dutch privacy legislation. Linking personal data to a passenger's identity is only allowed with the person's permission. Nevertheless, critics exist in relation to the fact that the provider of the smart card has a de facto monopoly position. User groups doubt the possibility to check the correctness of trip charges made to the card as these are only controllable ex post. Despite the regulation to clearly indicate prices, it is not clear how this can be checked on the online bill.

A certain reservation exists from the consumer's point of view as the OV-Chip card is seen as a prime target for pick pockets. Regulation, information, transparency and control should be reinforced. It was discovered during 2008 that the OV-chipkaart security system had been cracked. TLS introduced a new security plan in mid 2009. If the personal smart card is stolen or lost it, the card can be blocked to avoid misuse.

Region's prestige

The introduction of the new ticket system is a big step towards seamless travel a national level and can help to promote the sustainable image of the Netherlands and Amsterdam as a city.

Access for people on low incomes

The OV-Chip card builds on the same price system as before and certain age groups (children aged 4 to 11 and 65-plus) can travel at discounted prices.

Amsterdam offered three months of free travel to elderly people (65 plus), which has resulted in an increased interest in the new OV-Chip card in this age group.

Mode shift, congestion and GHG emission

The effect on modal shift cannot be measured at this time, because no empirical evidence on the change in travel pattern after the introduction is available.

Transferability of findings

The implementation of e-ticketing in the Netherlands has been slow and delay has been due to a number of reasons, which, at the same time, present lessons to be learned for other countries and regions with plans in this direction. It is important to recognise that the implementation of the new system is driven at a national level and thus is a rather top-down approach than bottom-up like in other countries where similar developments start within a certain region and are then extended. A further difference is that the system includes all public travel modes to be used with a single smart card: the e-ticket.

The reason for this national approach was to avoid constraining travellers to travel with several different systems and smart cards; even under the constraint that such approach results in the need for a synchronisation between a large number of parties. Most of the problems that arose during the process have been discussed in the case study and relate to errors and or failure in leadership or co-ordination.

10.4.3 Marketing of interconnection with other transport modes and private independent services

Problems addressed

This solution discusses the provision of a privately-operated bus service to link the international ferry services to the public transport network. Further, it relates to the marketing of certain interconnection possibilities with other long distance modes (i.e. rail), a strategy where interconnection is used as a measure of convenience to attract passengers.

The functioning of the DFDS shuttle service between the ferry terminal and Amsterdam Centraal Station is described above. It should be noted that this privately-provided travel service takes 30 minutes and has a cost of € 8 per person.

In relation to marketing interconnection it is important to note that DFDS, as the international ferry operator, particularly promotes the interconnection with international rail travel aiming to attract long-distance foreign clients to the ferry services. In this case DFDS particularly promotes the link with German railways and their special transnational ticket "Europa-Spezial". While no direct integrated booking with the ferry service is available the operator refers to the booking on its 'partners' website.

Performance against main toolkit criteria

Cost

The cost of these measures is moderate to very low to the ferry operator. Promoting interconnecting services on websites does not imply significant costs at all.

The set up of an international ferry operator's own shuttle service in a situation where the interconnection and multi-modal options at the terminal are relatively poor implies the costs of providing the bus, but at the same time delivers a captive market as the shuttle service improves the overall service quality of the ferry travel for the passenger.

Financial feasibility

The financial feasibility of a privately operated shuttle bus is solely the responsibility of the operator, who will make his decision according to the overall economic benefit to his operation.

For integrating information on potential interconnection and offers from transport service providers that can be used as links and feeders to the private company's own operation does not have any financial feasibility aspects.

Organisational/legal feasibility

No great organisational challenge as no in-depth co-ordination is required to promote the service.

Acceptance by users

Acceptance by users is high as ticket purchase for the shuttle service is possible when purchasing the ferry ticket. Further, no competitive public transport service is available with a comparably smooth transfer.

Impact on users' door to door travel time

The bus shuttle service is the quickest connection between the international ferry terminal and Amsterdam Centraal Station and thus also to the wider public and long-distance transport system.

Impact on users' door to door travel cost

The bus shuttle is the cheapest of all options currently available.

Transferability of findings

The implementation of private sector solutions can also be found in other case studies and in particular the use of buses seems an economically viable and flexible option. However, it needs to be considered that these activities are driven by purely overall economic reasons and therefore do not underlie general public transport requirements in terms of pricing or accessibility for certain groups. Further, such services and interconnections will exist only as long as the service contributes to the performance of the whole undertaking in terms of economic feasibility. As such these solutions do not necessarily offer long term sustainable solutions.

10.5 SOLUTIONS ALREADY ENVISAGED

No envisaged solutions in relation to further interconnecting the ferry terminal with the local transport system and other long distance travel are known.

10.6 PROBLEMS STILL TO BE SOLVED

The existing institutional or regulatory barriers

The opening up of the public transport market to tendering has had positive effects and has received increased interest from the private sector. However, clear guidelines in terms of integration beyond ticketing, for e.g. timetables and multi-modal trip information are still missing and undermine potential integration.

Lack of travel information and harmonised pricing.

Travel information for multi-modal trips is not fully available particularly for the international ferry services and the FFF that are at the centre of this case study. Therefore, significant improvements beyond the promotion of the transport service operator himself could be reached.

10.7 POTENTIAL SOLUTIONS

10.7.1 Overview

Potential solutions include the marketing and integration of the FFF as a interconnection possibility between the international ferry port and Amsterdam city centre.

10.7.2 Integration of Fast Flying Ferry Services

Problems addressed

Such an integration could contribute to a fast and reliable service to the city centre and Centraal Station which would support the economic viability of the FFF service and could also replace the DFDS shuttle bus, Thus by combining different passenger flows this solution would reduce the overall impact on traffic and would also shift public transport away from road.

An extension of the existing service directly to the terminal would also reduce transfer times without major investment requirements and thus offer direct integration of the international ferry services into the public transport network.

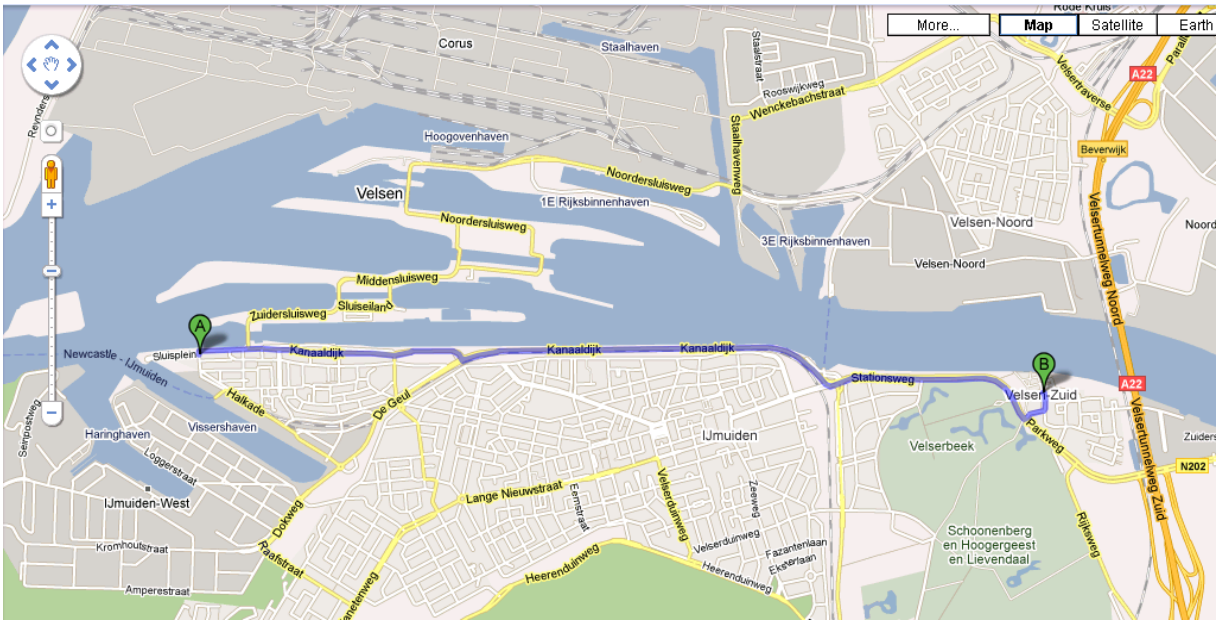


Figure 10-8 Map with terminal locations for FFF and international ferry terminal

Performance against main toolkit criteria

Cost

The extension of the ferry services would create additional operating costs for the extension of the route and some investment to create a small terminal for the FFF in the ferry terminal or a passenger ramp would be needed.

Technical feasibility

No technical challenges.

Financial feasibility

The financial challenges depend on the willingness and co-operation of the two different transport providers Connexxion and DFDS. This extension of such a service will most likely only be feasible without competition from the shuttle bus service.

Organisational/legal feasibility

The organisational feasibility will depend on whether a specific tender for the extension of the FFF service would be required as this might increase the costs for setting up the service and also the timeframe in which the project could be put into reality.

The service could be integrated in a similar manner as the already existing cost-effective All-in One Travel Tickets. Currently, this ticket type is in place for travel to and from Schiphol and allows for one train journey from Schiphol airport to Amsterdam Central Station upon arrival to Amsterdam and back to Schiphol when leaving and includes 24-, 48-, 72- hour OV-Chip card for public transport in Amsterdam.

Acceptance by users

A high acceptance of users can be expected as the FFF service with its hydrofoils has very unique characteristics as it is the only regular hydrofoil service in northern Europe. Since the main target group of the extension of the service would be tourists it can be assumed that this would also have positive effects on the overall journey and travel experience.

Other aspects of political acceptability

From a political perspective this service would underline the integration efforts of the government as it would also allow passengers to directly enter the public transport network.

Impact on users' door to door travel time

The travel time between the international ferry terminal and Amsterdam city centre would slightly increase in comparison to the shuttle bus.

Impact on users' door to door travel cost

The decision of the actual ticket price would have to be left to negotiations among the private operators.

Region's prestige

The direct interconnection of two ferry services with different spatial reach would positively contribute to the image of the Amsterdam city region, particularly as it blends in directly with is maritime heritage.

Mode shift, congestion and GHG emission

A modal shift from road to water could be achieved. This can be reached by increased usage of an existing service and thus would have positive effects on congestion and emissions.

10.8 SUMMARY OF CONCLUSIONS

The Amsterdam case study focuses on the integration of ferry services at two levels: the integration of ferry services in the Amsterdam public transport system and the interconnection between the Amsterdam public transport system with international ferries from the port of Ijmuiden.

Two different kinds of ferries are part of the Amsterdam regional public transport system. The first ones are the local GVB operated ferries that serve the area in the inner harbour. These ferries are free of charge have their central terminal outside the Amsterdam Centraal Railway station. This location allows for quick interchange to other public transport modes (tram, bus, taxi), individual active travel modes (bicycle and walking), but also to regional and long distance rail services, which leave from the railway station platforms. Finally the GVB ferry services also connect to the Fast Flying Ferry (FFF). Since these services are free of charge it can be argued that they allow for seamless travel in terms of charging and ticketing.

The second type of ferry is operated by Connexxion, a company that is the largest regional bus operator in the Amsterdam region, and provides a high speed (65km/h) service to Ijmuiden. The FFF is a regional service and with its use of the terminal at Amsterdam Centraal is well integrated as described above for the GVB ferry services. Further, the operating company has now integrated the service into the new ticket scheme and the OV-Chip card can now be used to purchase travel for the FFF.

The Amsterdam city region announced that all paper tickets have been eliminated by June 2010 and replaced by a personalised and anonymous smart card. This is part of the "Regionaal Verkeer-en-Vervoerplan" (Regional mobility and transport policy plan) which follows a long term strategy. The introduction of the smart card is a move to increase the interoperability on all Dutch public transport services, to allow more variable tariff design, but also to improve service management e.g. with line operation (via GPS) data, vehicle occupation, and passenger flow data. Such data also allows for exact division of traffic revenues between operators etc. The introduction of the smart card is a further step to ease the integration and interconnection between different operators and modes and has the potential to include further services and also to expand reach beyond the Amsterdam region. However, it is not absolutely clear who is the overall beneficiary of the new system.

These are developments that are comparable to the findings in the Lisbon case study that follows, where ticketing is moving from a modal or operator led approach towards a 'mobility' approach.

However, the introduction of the new smart card, in contrast to the Lisbon case, is driven from a national perspective to integrate all public transport within the Netherlands, whereas in the Lisbon case the approach is a bottom-up development that is now starting to be implemented in different regions and is aiming at integrating rail services at national level as well.

The sustainability of interconnection beyond integrated ticketing in terms of timetables and multi-modal trip information emerges as a new issue from the case study. How can a transport system be competitive and interconnected at the same time? As these two conditions are somewhat contradictory further investigation should look into tendering procedures for public transport services and the relevance and weight that is given to interconnection.

The interconnection between the Amsterdam regional transport system and intercontinental ferries is rather limited and today only interconnection by bus is described as an effective possibility. Operators actually discourage other possibilities through their description and the FFF option even though possible is not even mentioned on the port's website. The promotion of the existing DFDS shuttle service and the provision of interconnection is primarily driven by image and profit interest of the international ferry service provider DFDS. This finding is quite relevant as interconnection is recognised by the private sector as an important part of the travel experience, which is especially true when it comes to tourist travel as in this case study.

At the same time significant potential can be identified for connecting the ferry service operations, the FFF and the international services as this would have a positive effect on the image of the service and add to the attraction of using this link as part of the touristic experience.

Further, multi-modal travel information systems do not even include the ferry port as an option. Therefore, the potential of interconnection is not being fully exploited. Consequently, the development potential is relevant but, given the operating structure, will have to be driven by the private

APPENDIX 2

AMSTERDAM FERRY SERVICES: TIMETABLES & INFORMATION

Plan uw reis met Connexxion

Dienstregeling | Omleidingen | Reisplanner

› Opnieuw zoeken Help

Uw selectie

Van	Velsen Zuid, Pontplein
Naar	Amsterdam, CS/De Ruyterkade
Lijn	419
Van/naar	419 - Velsen Zuid, Pontplein - Amsterdam, CS/De R
Dagsoort	maandag-vrijdag
Geldigheid	04-04-2010 t/m 01-01-2011

Service

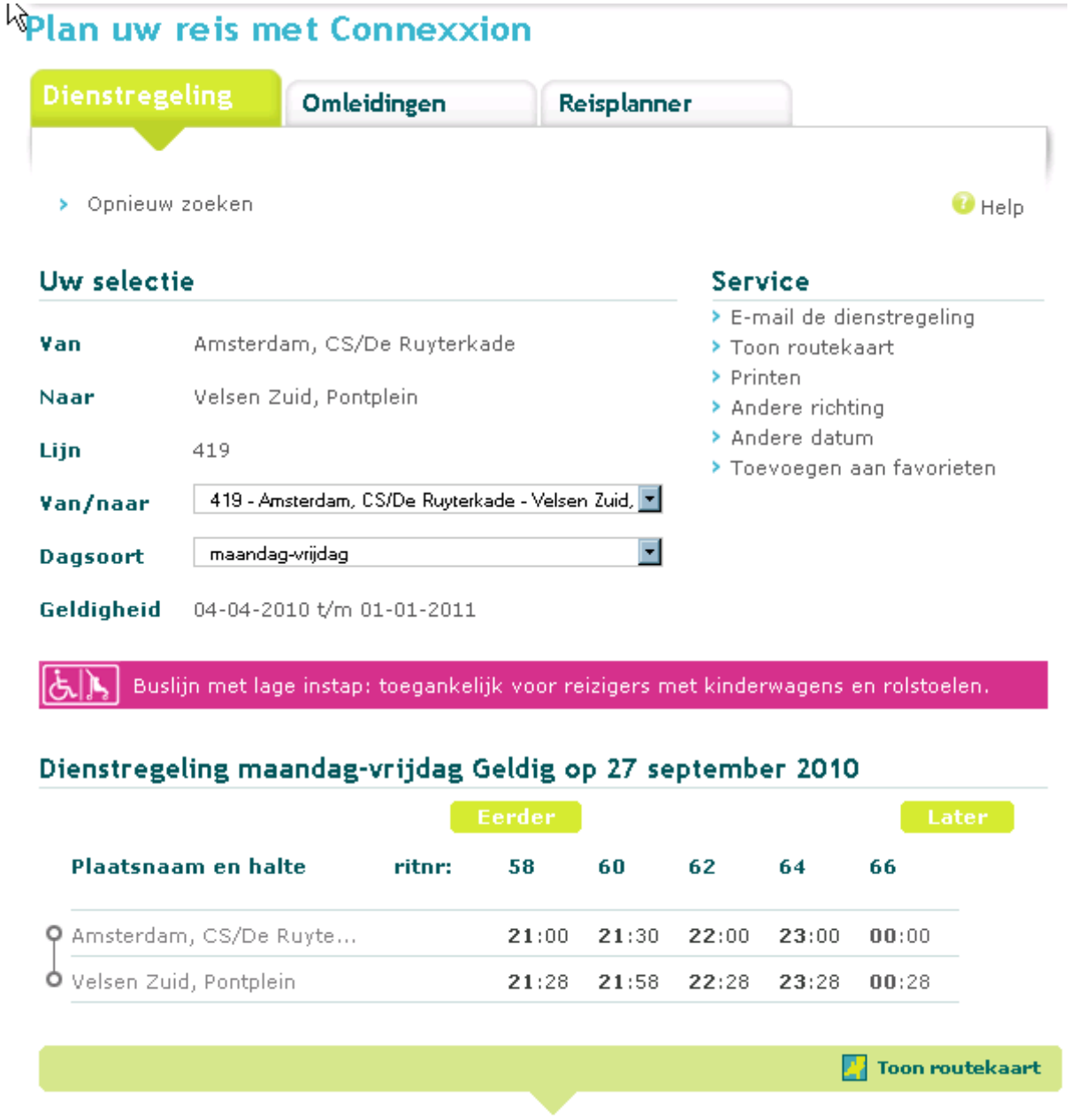
- E-mail de dienstregeling
- Toon routekaart
- Printen
- Andere richting
- Andere datum
- Toevoegen aan favorieten

Buslijn met lage instap: toegankelijk voor reizigers met kinderwagens en rolstoelen.

Dienstregeling maandag-vrijdag Geldig op 27 september 2010

		Eerder					Later
Plaatsnaam en halte	**ritnr:**	**1**	**3**	**5**	**7**	**9**	**11**
Velsen Zuid, Pontplein		**06**:30	**07**:00	**07**:30	**08**:00	**08**:30	**09**
Amsterdam, CS/De Ruyte...		**06**:58	**07**:28	**07**:58	**08**:28	**08**:58	**09**

Toon routekaart



Plan uw reis met Connexxion

Dienstregeling | Omleidingen | Reisplanner

› Opnieuw zoeken — Help

Uw selectie

Van	Amsterdam, CS/De Ruyterkade
Naar	Velsen Zuid, Pontplein
Lijn	419
Van/naar	419 - Amsterdam, CS/De Ruyterkade - Velsen Zuid,
Dagsoort	maandag-vrijdag
Geldigheid	04-04-2010 t/m 01-01-2011

Service

- E-mail de dienstregeling
- Toon routekaart
- Printen
- Andere richting
- Andere datum
- Toevoegen aan favorieten

Buslijn met lage instap: toegankelijk voor reizigers met kinderwagens en rolstoelen.

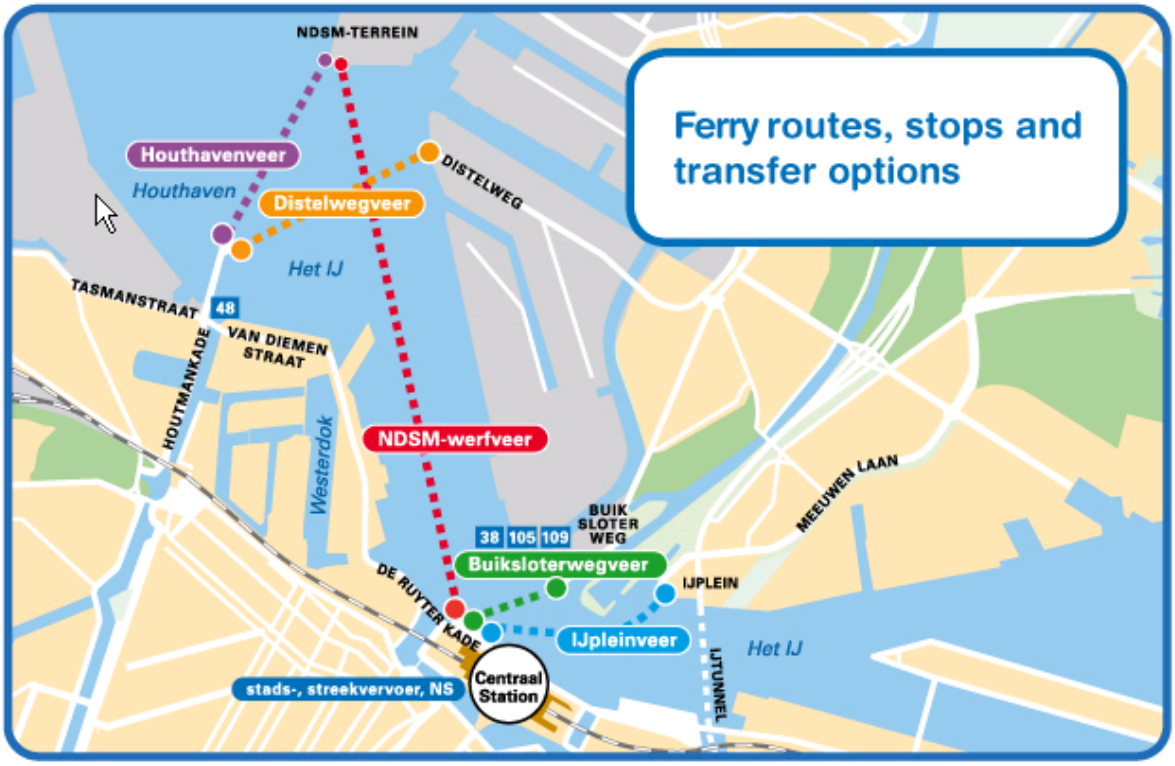
Dienstregeling maandag-vrijdag Geldig op 27 september 2010

Eerder — Later

Plaatsnaam en halte	ritnr:	58	60	62	64	66
Amsterdam, CS/De Ruyte...		21:00	21:30	22:00	23:00	00:00
Velsen Zuid, Pontplein		21:28	21:58	22:28	23:28	00:28

Toon routekaart


IJmuiden FFF Fun Ticket
De Fast Flying Ferry is het leukste dagje uit, met goed en met slecht weer. Ervaar de sensatie om met 65 kilometer per uur over het water te scheren, direct van Amsterdam naar de evenementen in Velsen/IJmuiden en het zonnige strand.
Met het nieuwe FFF FUN Ticket heeft u
gratis voordelen zoals kortingen in restaurants en op leuke doe activiteiten zoals blo-karten op het strand.
gratis busvervoer in IJmuiden (lijn 82 binnen de gemeente Velsen en bij zonnig weer de FFF Beach Bus, een directe pendelbus naar het strand)
Uw onvergetelijke trip start direct achter Amsterdam CS (steiger 14 naast de GVB pontjes).
Het FFF FUN Ticket kost slechts € 12,50 per persoon (All in: retour Fast Flying Ferry + busvervoer IJmuiden)
Kortingen en acties op basis van beschikbaarheid.
Bij Horeca en Blow-karten kunt u bellen om te reserveren, zodat u zeker kunt zijn van beschikbaarheid.
The Fast Flying Ferry is a wonderful way to enjoy a day out, in good weather and bad. Experience the sensation of racing across the water at 65 km/h straight from Amsterdam to events in Velsen/IJmuiden and the sundrenched beach.
The new FFF FUN Ticket offers you:
discounts in restaurants and for fun activities like riding blow carts at the beach;
free bus travel in IJmuiden (on route 82 within the municipality of Velsen and in good weather on the FFF Beach Bus, a shuttle bus running to and from the beach).
Your unforgettable trip starts just behind Amsterdam CS (at pier 14 next to the GVB ferries).
The FFF FUN Ticket costs only EUR 12.50 per person (All inclusive: Fast Flying Ferry return trip + bus travel in IJmuiden)
Gratis IJmuidense Makreel
Visspecialist Nico Waasdorp | IJmuiden Haven
Voor adres en voorwaarden zie achterzijde van deze bon
1
Voor €7,50 Patat met Vis (€2,- korting)
Strandpaviljoen Zuidpier | IJmuiden aan Zee
Voor adres en voorwaarden zie achterzijde van deze bon
FAIR PLAY CASINO
€5,- speeltegoed + speluitleg
Fair Play Casino | IJmuiden
Voor adres en voorwaarden zie achterzijde van deze bon
2
€5,- korting op High Tea
Holiday Inn IJmuiden Seaport Beach | IJmuiden Aan Zee
Voor adres en voorwaarden zie achterzijde van deze bon
7
10% korting op onze blokartclinics (beach sailing) van 2 uur
't Coraaltje | IJmuiden
Voor adres en voorwaarden zie achterzijde van deze bon
3a
Gratis flesje wijn voor thuis bij lunch of diner
Restaurant Het Roode Hert | Velsen-Zuid
Voor adres en voorwaarden zie achterzijde van deze bon
8
5% korting op onze merkkleding van Roxy, Billabong en Quiksilver en op de Reef slippers
't Coraaltje | IJmuiden
Voor adres en voorwaarden zie achterzijde van deze bon
REEF
3b
TRAMPOLINE CENTRUM IJMUIDEN AAN ZEE
Gratis glas limonade bij trampoline springen (€2,-)
Trampolinecentrum IJmuiden aan Zee
Voor adres en voorwaarden zie achterzijde van deze bon
4
Gratis presentje (leeslampje)! Gratis boeken en tijdschriften lenen woensdag t/m zondag + leuke gratis activiteiten op woensdag en zaterdag!
Strandbibliotheek | IJmuiden
Voor adres en voorwaarden zie achterzijde van deze bon
5
Het IJ
IJMUIDEN


Ferry routes, stops and transfer options
NDSM-TERREIN
Houthavenveer
Houthaven
Distelwegveer
DISTELWEG
Het IJ
TASMANSTRAAT
48
VAN DIEMEN STRAAT
HOUTMANKADE
Westerdok
NDSM-werfveer
38 105 109
BUIK SLOTER WEG
Buiksloterwegveer
DE RUYTER KADE
IJPLEIN
IJpleinveer
MEEUWEN LAAN
Het IJ
IJTUNNEL
stads-, streekvervoer, NS
Centraal Station