Institute for Sustainability

iTransfer
sustainable ferry travel

SEStran Ferry Toolkit

Section 9: Integrated Through Ticketing

SEStran
South East of Scotland Transport Partnership

The Interreg IVB North Sea Region Programme
Investing in the future by working together for a sustainable and competitive region

European Regional Development Fund
Investing in your future

This document is part of iTransfer, a North Sea Region Interreg programme project, which is funded by the European Regional Development Fund.

iTransfer (Innovative Transport Solutions for Fjords, Estuaries and Rivers) aims to make ferry transport more freely accessible and sustainable, and encourage more people to travel by water. In areas in the North Sea Region (NSR) there are opportunities to replace existing vehicle routes with passenger ferries as a viable alternative. Travelling by ferry is more sustainable, easier and quicker. It can also provide lifeline services to remote communities.

For more information visit www.itransferproject.eu

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Section 9: Integrated Through Ticketing

1. Overview

1.1. Improving water-based public transport is a key issue in the NSR to safeguard sustainable accessibility of regions which would otherwise be inaccessible or suffering from their remote location. The iTransfer partners pursue an implementation-oriented TOP approach to improve water-based accessibility by fostering development of Technology (ferries & landings), Operation (integration with public transport & set-up of ferry connections) and addressing Policy issues (tendering of ferry services & barrier-free access for disabled people) on the national and EU level.

1.2. North Sea local and regional authorities wish to improve their accessibility as sustainably as possible. The road system, in particular around urban and metropolitan areas such as London, is often congested. NSR has significant underused capacity for water transport on rivers and estuaries. New ferry services could offer new access for passengers and improved interconnectivity within cities, islands or inland destinations by river.

1.3. Regional, national and EU programmes and policies demand reduction of CO2 emissions. Business and tourism need greater accessibility and interconnectivity of public transport. North Sea islands, such as Terschelling and Helgoland, located in environmental protected areas, need accessibility by sustainable ferry technology. Regional Public Transport Authorities seeking improved accessibility of islands and suburbs are looking for

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appropriate ferry technology which offers modern and commercially viable transport quality, combining reduced fuel consumption (or even new fuel concepts), low CO2 emissions, and less wash to protect the fauna and flora near the shore. To implement new transport concepts, more and new types of ferry landings are required because of the large North Sea tidal range. Today's landing equipment does not always meet current standards for disabled use, operability, sustainability, service orientation and interconnectivity with other public transport modes. We need to understand the passenger ferry market demand, specific passengers' requirements and needs in order to tailor solutions to compete against individual transport.

1.4. As rules in the field of passenger ferry transport have become so complex and sophisticated, European players such as local, regional and national administrations and (public) transport authorities, ferry operators and shipyards have joined forces trans-nationally in the iTransfer project to work jointly on new technology, operational concepts and policy frameworks to improve accessibility and sustainability.

1.5. iTransfer falls into the area of intervention 3.1, regional accessibility strategies of the Interreg IV B NSR programme. Focussing on ferries as sustainable means of transport to optimize access to regions where water courses offer potential for public transport, it seeks a strategy "how" to make efficient use of this potential. Recent stagnation of accessibility by ferry proves that individual partners cannot find a satisfactory solution to promote "cruise to work". By working together across different regions and sectors the project will develop a new ship design, adapt a ship for eco-fuel and build a tide proof landing, and build critical mass to show new policy options.

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1.6. The AIM of iTransfer is to develop & present innovative, sustainable solutions in ferry technology, operation and policy to improve regional accessibility by water-based public transport in the NSR via a TOP approach:

- Resolve TECHNOLOGICAL issues (design of ferries and landings),
- Improve ferry OPERATION (integration of ferries with the public transport system and set-up of new ferry connections)
- Support a POLICY environment which resolves tendering problems and recommend comprehensive barrier-free access solutions.

1.7. Outputs will include installation and launch of an innovative super accessible NSR ferry-landing and a sustainable standard NSR ferry operating with liquefied natural gas (LNG).

1.8. It addresses underused water transport capacity, environmentally friendly development of regions difficult to access by road, and practical equal opportunities for disabled and elderly people. The project aims to provide studies for new connections and enable regions with little ferry experience to set up new connections.

2. Integrated Through Ticketing Definition

2.1. Integrated through ticketing allows a person to make a journey that involves changes within or between different transport modes with a single ticket that is valid for the complete journey. Modes being buses, trains, subways, ferries, etc. The purpose of integrated ticketing is to encourage people to use public transport by making it easier to switch between transport modes.

2.2. Integrated ticketing requires coordination and co-operation between all public transport providers and suppliers. Political, technological and project management issues all result in the delay of uptake.

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3. Through Ticketing Policy Context

3.1. *The European White Paper 2001 – European Transport Policy for 2010: Time to decide*.

3.2. The European White Paper on Transport Policy was adopted in 2001. This document demonstrated the European Commission's initial interest in through ticketing and it's potential. At this early stage, the commission identified speed and convenience as the main benefits of Through Ticketing to EU passengers. The document focuses on the door-to door journey and suggests that integrated ticketing could make public transport much more appealing to potential passengers. The paper also advises that the inclusion of various operators will provide a greater transparency of fares and provide customers with the flexibility to choose different modes without hassle.

3.3. *European White Paper 2011 - Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system.*

3.4. The European White Paper 'Roadmap to a Single European Transport Area' was adopted in 2011, and sets the Commissions goal of achieving the 60% GHG emissions reduction target by 2050 from 1990, levels (this would correspond to emissions cuts of around 70% below 2008 levels). The paper focuses on the need to integrate various modes of transport. Within this paper the commission states that '*Smart inter-modal ticketing, with common EU Standards that respect EU competition rules is vital*'. Annex 1 of the report outlines the commissions list of initiatives, which are broken down into the following areas:

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1. An efficient and integrated mobility system
2. Innovating for the future, technology and behavior
3. Modern infrastructure and smart funding
4. The external dimension (International Transport)

3.5. Through ticketing features both in initiatives 1 and 2 of the annex. The sub-categories include 'seamless door-to-door travel' and 'a technology road map'. It is proposed that a framework be established to promote the development and use of intelligent systems for scheduling and payment. With the goal of promoting mobility management (or Travel Planning as it is known in the UK), this will inevitably follow the work previously conducted by the CIVITAS project.

3.6. ***Green Paper -Towards a New Culture for Urban Mobility***

3.7. The Green Paper was published in late 2007 after an extensive consultation period during that year. The paper addresses the issues faced by urban areas of the European Union, which in 2007 covered 72% of the European population (this figure was taken from the United Nations, World Urbanization Prospects: The 2007 Revision).

3.8. The paper states that: *'Authorities should promote co-modality and reallocate space that becomes available after congestion mitigation measures. Intelligent and adaptive traffic management systems have also proven their efficiency in reducing congestion'.*

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3.9. ***Action Plan for Urban Mobility - Communication from the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions:***

3.10. The Action Plan for Urban Mobility, created in 2009, is centred on six themes. With regards to integrated ticketing, both themes one and six address this area. In the first theme 'the **promotion of integrated policies'**, an integrated approach to the development of urban transport systems also has the ability to influence areas like environmental protection (such as air quality).

3.11. In the sixth theme, '**Optimising Urban Mobility',** Action 20 'Intelligent transport systems (ITS) for urban mobility' states that an Action Plan which looks at electronic ticketing, payment, traffic management, travel information, access regulation and demand management opportunities will be conducted. And as a start the Commission will launch a study on improving the interoperability of ticketing and payment systems across transport modes.

3.12. ***Action Plan for Mobility 'State-of-play' as of November 2010:***

3.13. After consultations with stakeholder associations and following up on a dedicated workshop in March 2010, a new Expert Group on Urban ITS was established. It draws heavily on the experience of local stakeholders responsible for the deployment of ITS in urban areas, both for road and public transport. The topics of interest for the group are travel information, traffic management and urban logistics and smart ticketing. The first meeting took place on 8 December 2010. The outcome of its two-year mandate will be guidelines for deployment and a best practice manual. The project is supported under the framework contract of the ITS Action Plan.

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3.14. ***Polis Network***

3.15. Polis is a network of European cities and regions working together to develop innovative technologies and policies for local transport. Since 1989, European local and regional authorities have been working together within Polis to promote sustainable mobility through the deployment of innovative transport solutions.

3.16. Topics covered by the Polis Network are split in to 'pillars'. Of which the mobility and traffic efficiency pillar addresses issues related to network management, network efficiency and innovative services. Within this pillar, working group meetings have mainly drawn upon Polis' experience and knowledge in Intelligent Transport Systems (ITS) which has been at the heart of Polis activities since the creation of the network. It has focused in the recent past on issues such as network management (monitoring, information, management, integration and evaluation), ITS to support policy, ITS awareness raising, defining ITS research needs.

3.17. Topics being addressed in this pillar are:

- network and traffic management (ITS)
- traffic and travel information (ITS)
- new mobility services
- access restriction
- urban freight delivery and city logistics
- infrastructure and interchanges
- integrated ticketing and charging (ITS)
- automated vehicles

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3.18. These topics are covered by Polis through working group meetings, European projects, and through policy activities to communicate the opinions of European cities and regions on these topics to the European Institutions.

3.19. ***NESTI – The North East Smart Ticketing Initiative***

3.20. Another notable UK initiative is NESTI. In October 2009, Local Authority Leaders and Elected Mayors agreed to commit a total of £10 million to the NESTI programme. The NESTI programme is funded and or/supported by the 12 Local Authorities in the North East of England, the Tyne and Wear Integrated Transport Authority, Nexus and the major public transport operators in the Region. Their first confirmed phase of activity has been outlined as so:

- Smart ticket machines installed on all eligible buses and at all Metro stations in the North East of England;
- A back-office system to manage the infrastructure;
- A range of ways for customers to buy operators' smart ticketing products and load them to a smartcard, via a regional retail network; and,
- A marketing programme to explain the benefits of smart ticketing to customers and encourage them to use it to access public transport.

A second phase which, at this stage, is only intended is outlined as so:

- A Regional Pay As You Travel product;
- A retail network to support the Regional Pay As You Travel product and allow customers to buy operators' smart ticketing products and load them to a smartcard;

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- Develop options to include the smaller bus operators and regional rail services in NESTI; and,
- Expand the use beyond transport with the potential to integrate the cards with Local Authority Services.

3.21. ***Scottish Regional Policy – SEStran RTS (South East of Scotland Transport Partnership, Regional Transport Strategy***

3.22. The Regional Transport Strategy lays out a vision for the strategic development of transport in South East Scotland up to 2028. It includes a particular focus on links to and from Edinburgh, as the economic hub of the region. By its nature the RTS is an ever-evolving strategy, but the key aims and objectives will remain central to SEStran's work. The RTS has four key objectives:

- **Economy**: to ensure transport facilities encourage growth, regional prosperity and vitality in a sustainable manner.
- **Accessibility**: to improve accessibility for those with limited transport choice or no access to a car; particularly those living in rural areas.
- **Environment**: to ensure that development is achieved in an environmentally sustainable manner.
- **Safety & Health**: to promote a healthier and more active SEStran area population.

3.23. The SEStran RTS sets out its objectives in 'high', 'medium' and 'low' priorities. Integrated ticketing is outlined as follows:

- As a high priority, SEStran will engage with Transport Scotland and bus operators in order to progress the wider integrated ticketing agenda.

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- SEStran should work towards developing the coverage, attractiveness and sales of One-Ticket across the whole region.
- SEStran will seek a change in legislation to allow the full potential of integrated ticketing to be realised.

3.24. The SEStran 'One-Ticket' example will be demonstrated in the case study section of this report.

3.25. ***Scottish National Transport Strategy***

3.26. The Scottish National Transport Strategy (NTS) sets the long term vision for Scotland's transport policies. It was published in 2006 after the Scottish Government consulted the public, interested individuals and a wide range of organisations on their views for the future of transport in Scotland. Scotland's NTS sets out five high level objectives:

- Improve integration by making journey planning and ticketing easier and working to ensure smooth connection between different forms of transport.
- Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network;
- Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport with minimize emissions and consumption of resources and energy" ; and
- Promoting Integrated ticketing and higher quality transport interchanges to enhance the passenger journey
- Explore the possibility of introducing an integrated ticketing pilot across all modes in partnership with Regional Transport Partnerships or Local Authorities

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3.27. ***Scottish Government – Delivery Strategy, Smart & Integrated Ticketing***

3.28. Through discussions with various stakeholders in Scotland, the Scottish Government published a delivery Strategy in October 2012. The document outlines the current status of smart and integrated ticketing within Scotland. The Scottish Government lists its objectives and establishes the first phase of delivery with its various stakeholders. The purpose of the document is to bring all interested parties up to a common level of understanding and stimulate interest around smart ticketing, in non-technical language.

3.29. ***Scottish Government Ferries Review – Fares***

3.30. The Scottish Ferries Review started in 2009, when data gathering and an initial informal consultation took place. A further formal consultation on the terms of the draft ferries plan took place between June and September 2010. The review is now complete, however the Scottish Government are still welcoming comments on its conclusions.

3.31. Within the final draft, the Scottish Government state that '*the potential for developing an integrated through ticketing system should be considered as part of the long-term strategy for ferries. Integration is a key issue in terms of onward travel and, in both passenger cost and convenience terms, some form of smart ticketing programme would be of considerable value. For example, a pre-paid smartcard would be convenient for someone travelling from say Stornoway to Glasgow using a ferry, bus and then train service'.*

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3.32. ***Scottish Government Funding and its impact on ticketing***

3.33. It is clear from work being done elsewhere as part of the Ferries Review that costs of providing ferry services are rising quicker than general prices and the level of public sector support required to maintain existing service provision has seen a particularly dramatic increase in recent years. These cost increases are forecast to continue to rise in the future and options for funding ferry services is an issue that the Scottish Government is investigating. The issue has become particularly pressing in the current public expenditure climate.

3.34. ***Smart and Integrated Ticketing for Scotland***

3.35. The report sets out the findings of a review conducted by Transport Scotland and PricewaterhouseCoopers LLP. The work was commissioned by Transport Scotland to advance policy towards smart and integrated ticketing.

3.36. Despite the perceived advantages of integrated ticketing it was apparent that the current market is not delivering integrated ticketing in the quantity and speed which would make the full benefits realisable for passengers. For example, it is described that bus operators see a number of barriers to participation in integrated ticketing schemes resulting in their reluctance to co-operate together to deliver such products. The report listed the principal bus operator concerns as:

- Losing market share as passengers are not locked into one operator when buying a ticket;
- Not receiving a fair proportion of revenue from integrated tickets;

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- Concerns about Office of Fair Trading fines for anti-competitive practices; and
- The lack of freedom to set all ticket prices.

4. Case Study List

Region	Scheme	Launch	Modes
Greater London	Oyster Card	2003	Bus, tube, trams, Docklands Light Rail, London Overground, Thames Clipper Ferry and some National Rail Services
Northern Ireland	Smart Link	2009	Bus (Belfast and Londonderry), Regional and Intercity bus, Railways services
Paris	Navigo RATP/SNCF	2006	Subway, Commuter Rail (RER and Transilien), tramway, bus
The Netherlands	OV-Chipkaart	2011 (replacing the Strippenkaart)	Trams, Buses, Rail
Sweden	SL Access Card	2008	Buses, Metro, Rail, Tram, Ferries
South East of Scotland	One-Ticket	2002	Bus and Rail
West of Scotland	SPT Zone Card	1989	Rail, Bus and Ferry Services
Australia, Queensland	Translink	2004	Rail, Bus and Ferry Services

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5. Oyster Card, Transport for London – United Kingdom

5.1. **Background:** Oyster cards were introduced in London in 2003, offering passengers a single "e-card" for bus, tube, tram, ferry (Thames Clipper) and rail travel that can be topped up by users. London (population around 7 million) public transport services include bus, light rail and tube services managed by Transport for London (TfL) and heavy rail services operated by National Rail Train Operating Companies (TOCs). Virtually all services operated in London by National Rail TOCs. The cost of a single journey or multiple-trip Travelcard will depend on which zones you need to travel through. London is split into 9 zones, with Zones 1 and 2 in Central London and Zones 6-9 covering the outer edge of the capital.

5.2. **Card Features:**

- It is supported by a concentric ring fare structure (i.e. 6 zones) with the fare paid determined by the Travelcard 'zonal coverage'; and It is a time-

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based product sold in daily (i.e. all day and off-peak), weekly and annual forms.

- Off-Peak One-day Travelcard – valid from 9.30am Monday to Friday and all day (12.01am to 4.30am the following day) at weekends and public holidays
- Peak One-day Travelcard – valid for travel until 4.30am the following morning
- Passengers boarding a river bus service must present their Oyster card to an on-board ticket inspector who carries a hand-held card reader, and the appropriate fare is deducted from their pay as you go balance.
- Oyster pay as you go is only valid to purchase tickets for London River Services boats operated by Thames Clippers. Pay as you go is not accepted for payment by other river boat operators.

5.3. **Advantages:**

- Passengers can buy or top-up their cards from newsagents, tube and train stations, or online.
- A plastic wallet is also provided and the card is does not need to be removed for use on the card reader.
- The Oyster Card stops deducting credit once it reaches the one-day travelcard rate.
- Passengers are required to pay a £5 deposit for the card. However this is refundable.
- TfL has made it more cost effective to use the Oyster card than to pay by cash.
- Passengers are able to review their journey history online. Which can help with claiming for business travel

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5.4. **Issues:**

- As with most check-in systems for smart cards, some passengers either forget to or deliberately avoid scanning their card on boarding.
- As a preventative measure, Ticket collectors are employed by TfL to conduct spot checks on buses and the tube. All are equipped with card readers to check when a passenger has last checked in.
- Those who have not paid are removed from the vehicle and presented with an on-the-spot fine.

5.5. **Looking to the Future:** Transport for London has announced plans to start accepting contactless debit and credit cards on London Buses by the end of 2012, with the aim of expanding the new system to other transport modes by 2013. It is reported that TfL's long-term aim is to have a cashless transport system in the future.

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6. iLink Card (Translink) – Northern Ireland

6.1. **Background:** Launched in 2009, Translink's iLink provides unlimited day, weekly or monthly bus and rail travel within 3 specified zones across Northern Ireland. During the cards initial launch, Translink waivered the setup fee to encourage passenger uptake.

6.2. **Card Features:** You can also top-up day or weekly travel with the driver or conductor on board Ulsterbus and NI Railways services.

6.3. **Advantages:**

- It saves money. If you travel by bus and train within specified zones, using iLink could offer better value for money
- No restrictions on the number of journeys you can make within the zone you have purchased
- More convenient, safer, cash free way to travel
- Helps speed up boarding times on buses making overall journey times faster for everyone
- More flexible - iLink Cards can be passed to other family members or friends if they are travelling at a different time within the same zone
- If an iLink Card is lost or stolen it can be 'hotlisted' (electronically deactivated) to prevent anyone else from using it fraudulently.

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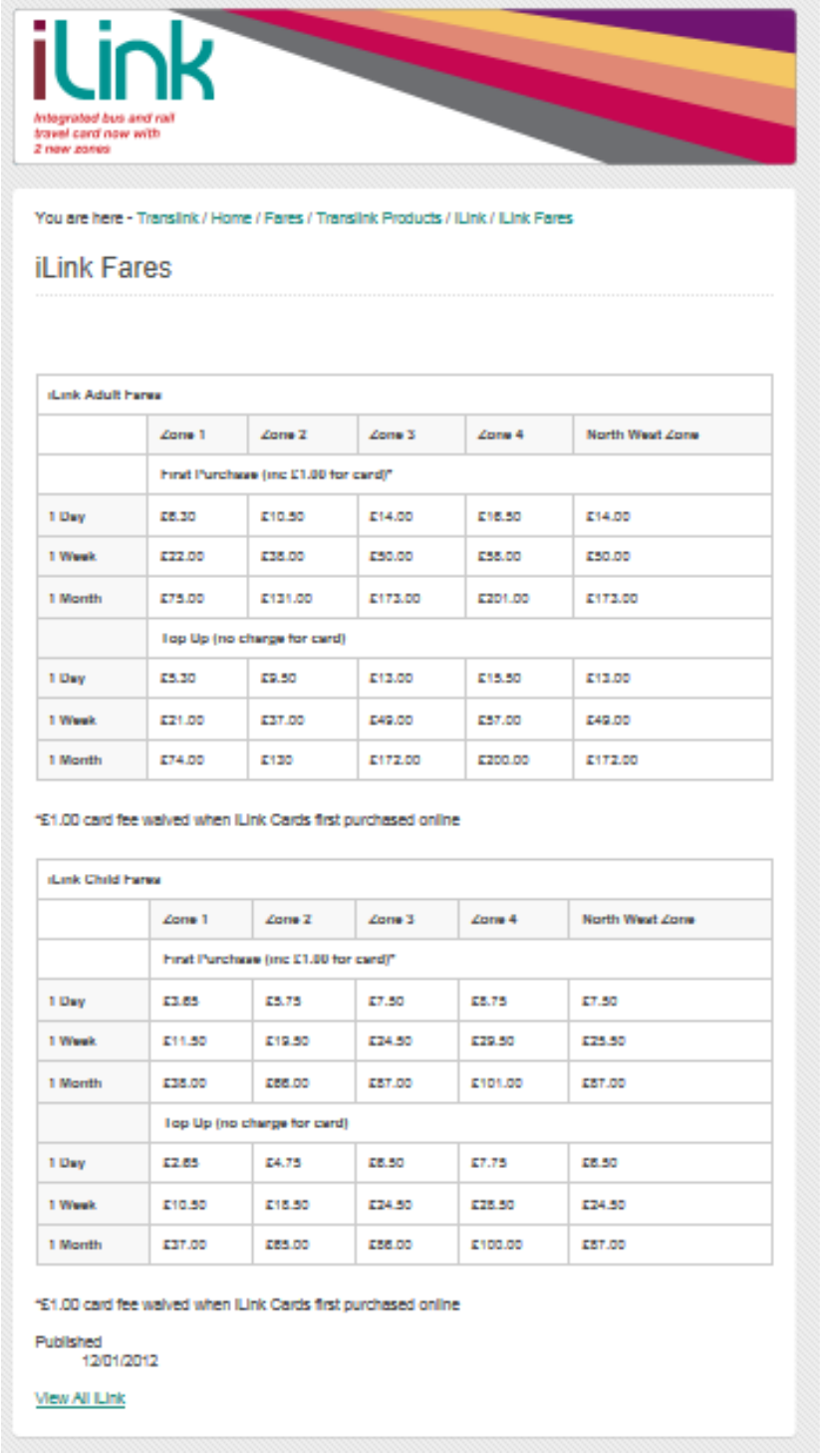
6.4. **Issues:**

- Passengers cannot top-up an iLink Card on-board a Metro service.
- Passengers cannot top-up an iLink Card online, only buy a new ticket
- There have been reported concerns over passenger data collection



iLink

Integrated bus and rail travel card now with 2 new zones

You are here - Translink / Home / Fares / Translink Products / iLink / iLink Fares

iLink Fares

iLink Adult Fares					
	Zone 1	Zone 2	Zone 3	Zone 4	North West Zone
	First Purchase (inc £1.00 for card)*				
1 Day	£6.30	£10.50	£14.00	£16.50	£14.00
1 Week	£22.00	£36.00	£50.00	£58.00	£50.00
1 Month	£75.00	£131.00	£173.00	£201.00	£173.00
	Top Up (no charge for card)				
1 Day	£5.30	£9.50	£13.00	£15.50	£13.00
1 Week	£21.00	£37.00	£49.00	£57.00	£49.00
1 Month	£74.00	£130	£172.00	£200.00	£172.00

*£1.00 card fee waived when iLink Cards first purchased online

iLink Child Fares					
	Zone 1	Zone 2	Zone 3	Zone 4	North West Zone
	First Purchase (inc £1.00 for card)*				
1 Day	£3.65	£5.75	£7.50	£8.75	£7.50
1 Week	£11.50	£19.50	£24.50	£29.50	£25.50
1 Month	£38.00	£66.00	£87.00	£101.00	£87.00
	Top Up (no charge for card)				
1 Day	£2.65	£4.75	£6.50	£7.75	£6.50
1 Week	£10.50	£18.50	£24.50	£28.50	£24.50
1 Month	£37.00	£65.00	£86.00	£100.00	£87.00

*£1.00 card fee waived when iLink Cards first purchased online

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7. Navigo Passe – France

7.1. **Background:** Since 2001, all public transportation companies for the Paris area have collectively migrated from tickets with a magnetic track to the Navigo pass, an advanced contactless card. The latest generation of Passe Navigo, the travel pass used by six million commuters in the greater Paris region, allows users to top up their cards from their NFC (Near Field Communication) mobile phones

7.2. **Card Features:** This contactless pass relies on two technologies:

- Chip-enabled card
- Wireless data transmission

The Navigo pass hosts a chip that contains all transportation information and has an antenna which communicates it to contactless terminals at the entry/exit gates of the Paris transportation network.

7.3. **Advantages:** Travelers can now pass through gates nearly four times faster than when using magnetic tickets, as information is transmitted with no contact and at a greater speed.

7.4. **Issues:**

- Automated machines for recharging the Navigo card (or for buying individual Metro tickets or carnets) will not accept a credit or debit card unless it is denominated in Euros. Thus causing an issue for some international visitors.
- Some Parisians are unhappy with the thought of having to use a smart card due to the privacy concerns.

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8. Dutch OV-Chipkaart – The Netherlands

8.1. **Background:** The OV-chipkaart was first introduced to the Rotterdam Metro in April 2005. The Amsterdam Metro followed suit in 2006. All trams and buses in Rotterdam accepted the OV-chipkaart from June 2007 onwards, and coverage in Amsterdam was extended to all trams and buses in November 2008. Both 'paper' tickets and the OV-chipkaart were able to be bought and used on public transport in Amsterdam and Rotterdam until mid-2010, after which only the OV-chipkaart could be used to pay for one's journey. Support for 'paper' single-use tickets and the strippenkaart system was then withdrawn area-by-area, for example in the province of South Hollandon 19 May 2011. The strippenkaart ceased to be valid on 3 November 2011, making the OV-chipkaart the only valid form of ticket for buses, trams and metro.

8.2. **Card Features**: Three versions of the card are currently available:

1. Disposable: One off card for rare users and tourists
2. Anonymous**:** For users who are not entitled to any discounts. Includes an electronic purse
3. Personal: For passengers who are entitled to discounts, such as children and the elderly. Includes personal information, passport photo and electronic purse

- Passengers are charged when they check in, and then refunded when they check out. If they don't check out, they are not given a refund, therefore making it more difficult to dodge fares
- Personal cards can be topped up automatically via direct debit and are easily recovered if lost or stolen

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- Personal cards can easily be topped up online; all cards can be topped up at vending machines in stations.

8.3. **Pricing Structure:** Passengers pay for the kilometres they actually travel and not per zone. The amount the passenger pays consists of the following:

- A basic rate. If the passenger transfers to another public transport modality within 35 minutes after checking in they do not pay the basic rate again.
- The passenger pays an amount per kilometre. The rate per kilometre differs per region. The regional authorities determine the rate for their own regions.
- Children from the age of 4 through to 11 and senior citizens who are older than 65 travel at a discount rate. The discount is only applied when travelling using a personal OV-chipkaart.

8.4. **Advantages**

- Drivers and conductors can easily monitor people checking in (but not checking out)
- Anonymous cards can be used by more than one person
- The system makes transport across the Netherlands more familiar to all passengers
- Authorities can now detect fraudulent cards, cloned cards and blacklisted cards easily.

8.5. **Issues**

- Passengers can avoid part of their fare by checking out early. Fare checks are still necessary. Passengers are fined up to €20 if they forget to check out. This is a still a regular occurrence, as there are no longer any turnstiles at the exits of stations.

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- While there is a window for checking out (eg. if a passenger forgets to check out in the morning, he or she can return in the evening and check out, and no fee will be applied), passengers cannot check in for a journey if they have just checked out.
- There have been cases of hacked cards. With this passengers have been able to fraudulently add money to their cards and on-board equipment is unable to detect such top-ups. This also causes a privacy issue in conjunction with personal cards, as these include the user's name and date of birth.
- If a bank account linked to a personal card does not have enough money in it during a direct debit, the card will automatically be blocked, with a €40 fee to unblock it.
- Personal cards can only be activated online. This creates a barrier for elderly passengers, for whom access to public transport is essential.
- Passengers are no longer able to buy a single ticket, so some journeys can be more expensive than before.
- Cards are fixed to a certain class on trains (first or second) and the only way to change it is via the website.

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9. Access Card Stockholm – Sweden

9.1. **Background:** Public transport in Stockholm consists of bus, metro, regional/suburban rail, light rail, tram and archipelago boat operation in Stockholm County. The bus and rail service is organised by Storstockholms Lokaltrafik (Stockholm Transport, literally: Greater Stockholm Public Transport) SL, which is owned by the Stockholm County Council. The operation and maintenance of the public transport systems are delegated by SL to several contractors. The boat traffic is handled by Waxholmsbolaget there are several archipelago boat lines in Stockholm County, run by Waxholmsbolaget. Some of them operate year around. One boat line, Djurgårdsfärjan, goes in central Stockholm, between Slussen and Djurgården.

9.2. **Card Features:** The current system consisting of magnetic strip cards and stamped coupons are to be phased out. The new contactless system was originally trialled in the Stockholm Metro, and on the buses on Lidingö (an island in the inner Stockholm archipelago). The new SL Access system is based on RFID (radio frequency identification) smart cards. This system allows differentiated travel card schemes possible, e.g. local travel cards.

9.3. **Text-me-a-Ticket:** Text-me-a-ticket can be used as an alternative to the SL Access Card if passengers you do not have a travel card or another prepaid ticket. However, this service is only available for those who have a registered sim with a Swedish mobile service supplier. Therefore, visitors to Sweden would be unable to use this service.

9.4. **Pricing Structure:** There are two types of ticket available, the 'Zone Card' and the 'Travel Card' There are three zones in Stockholm County and passengers need to be aware of the zones if they are using a zone ticket. If

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the passenger holds a travelcard, zones are not important, as travelcards are valid everywhere in the Stockholm County and calculated on a time basis. Please see the table below for more information on ticketing:

Zone tickets		
Ticket name	**Full price**	**Reduced price**
Cash ticket, per unit	22 SEK	14 SEK
Pre-paid ticket, per unit	18 SEK	11 SEK
Pre-paid ticket, slip of 16 units	180 SEK	110 SEK
Text message ticket 1 / 2 / 3 zones	36 / 54 / 69 SEK	22 / 33 / 44 SEK
Vending machine ticket 1 / 2 / 3 zones	36 / 54 / 69 SEK	22 / 33 / 44 SEK
Travel cards		
Card name	**Full price**	**Reduced price**
1-day / 24-hour card	115 SEK	70 SEK
3-day / 72-hour card	230 SEK	140 SEK
7-day card	300 SEK	180 SEK
30-day card	790 SEK	490 SEK
90-day card	2,300 SEK	1,400 SEK
Season card, January–April	2,540 SEK	1,520 SEK
Season card, May–August	2,060 SEK	1,240 SEK
Season card, September–December	2,670 SEK	1,600 SEK
Annual card, January–December	7,160 SEK	4,300 SEK
Student prices		
Card name	**Price**	
30-day card	560 SEK	
90-day card	1,540 SEK	

9.5. **Advantages:** Visitors are able to keep the card as it is functional for six years. Passengers are able to reload the ticket on their next visit to Stockholm. Stockholm residents are issued with a Swedish personal ID

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Number ('personnummer') which can be used to protect the SL Access card against loss or theft.

9.6. **Issues:** There were several delays to the SL Access card. SL had issues over quality and problems with the system. Social Democratic members of the board of directors at SL wanted to investigate whether it is possible to cancel the contract with the supplier, the ERG Group. In April 2008 SL contracted IBM to complete the installation of SL Access before the end of 2008.

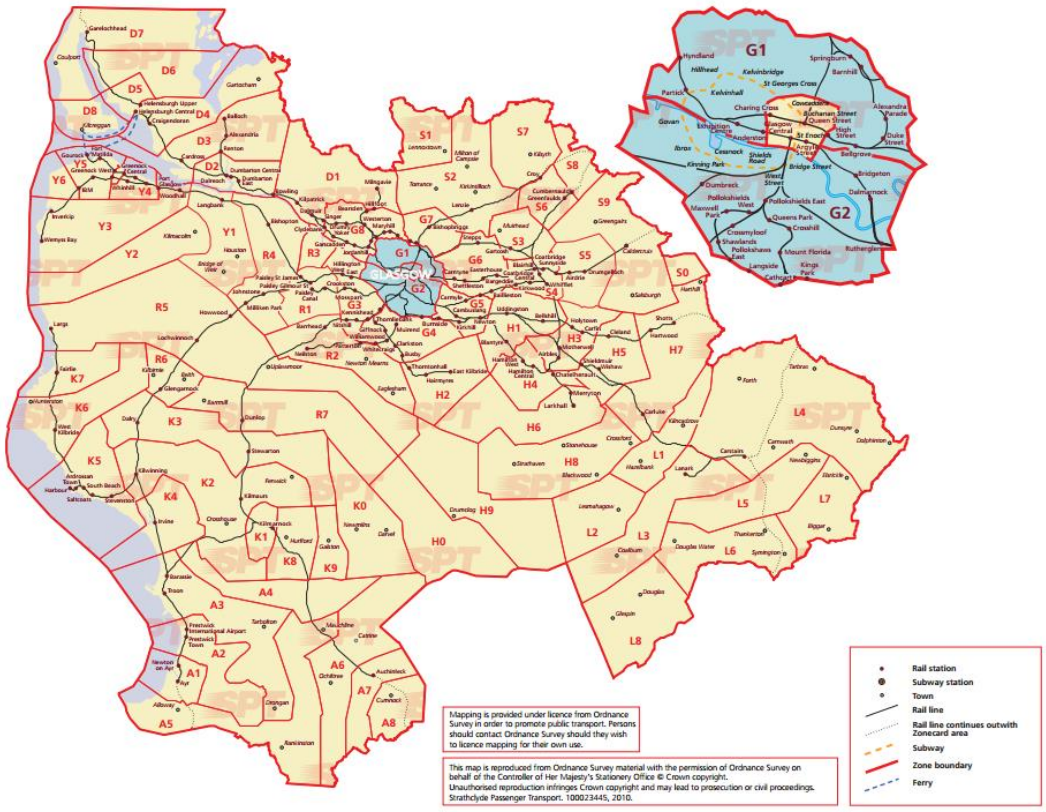
9.7. **Looking to the Future:** A concept app for SL Access is under consideration. The concept mobile App uses 'geo-tagging' to determine how much it should charge the passenger. This is especially good for one off journeys. The passenger can top-up their online account either monthly or weekly. Once purchased, the customer can then present a QR code (quick response code) on the screen of their phone which could then be scanned at ticketing barriers.

10. ZoneCard, SPT (Strathclyde Partnership for Transport) – West of Scotland

10.1. **Background:** Strathclyde Partnership for Transport, the Regional Transport Partnership serving the Strathclyde area of twelve local authorities, has operated the ZoneCard since 1989. The ZoneCard is a flexible season ticket for travel by rail, subway, bus and some ferries in the Strathclyde region.

10.2. **Card Features:** Pricing structure: Prices are calculated on a zone basis. The passenger chooses their departure location and final destination from a list of locations within the SPT region. Costs are then calculated on

how many zones the passenger requires to travel through. These zones are outlined in the image below:



10.3. **Advantages:** The SPT ZoneCard can be used on all modes by all operators and therefore is ideal for multi-modal journeys. The ZoneCard has been supported through the use of public funds. The scheme has the advantage of operator cooperation and promotion.

10.4. **Issues:** As with other multi-operator schemes, some participating operators have expressed significant concerns about revenue allocation. SPT continue to have an open dialogue with the operators to address this. Other noted issues have included the lack of ticket outlets and its paper based format. Some passengers have also commented that the ticket is not cost effective for single-mode journeys at this stage.

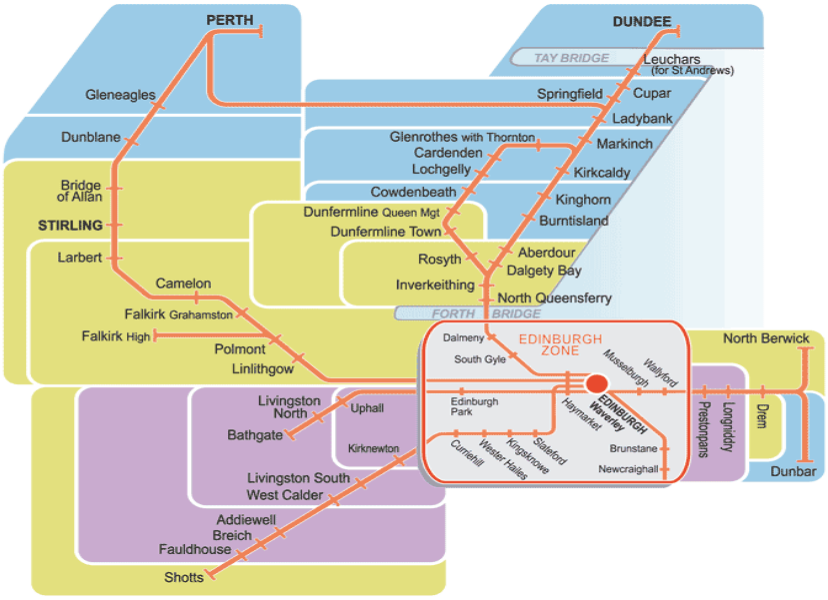
10.5. **Looking to the future:** SPT is pursuing a number of smartcard related projects and outputs across subway, bus, rail and ferry. These include an aspiration to transform the current ZoneCard integrated ticket product into a smart ticket in the Strathclyde area. The subway is operated directly by SPT and a modernisation programme is currently underway. This includes the replacement of paper based cards with a smartcard ticket in 2013. Further information can be found in section 12.6 of this report.

11. One-Ticket, SEStran (South East of Scotland Transport Partnership) – South East of Scotland

11.1. **Background:** One-Ticket is a partnership between the member Councils of SEStran (South East Scotland Transportation Partnership) and the transport operators who operate within the SEStran area. One-Ticket was initially launched in 2002 through investment from the Scottish Executive.

11.2. **Card Features:** The paper based card currently offers passengers one of two options, 'RAIL+BUS' or 'BUS+Bus'. Tickets can be purchased online, manned stations or through 'Pay Point' stations throughout the One-Ticket area

11.3. **Pricing structure:** Prices are calculated on a zone basis. The passenger chooses their departure location and final destination from a list of locations within the One-Ticket region. Costs are then calculated on how many zones the passenger requires to travel through. These zones are outlined in the image below:



11.4. **Advantages:**

- Combines bus and train travel and can be used on virtually any bus within the One-Ticket area
- Can be bought online, through local ‘Pay Point’ or from any manned rail station within the One-Ticket area
- Tickets you can have unlimited travel in your chosen travel Zone and to & from Edinburgh

11.5. **Issues:**

- The system is still limited to a paper based ticket system
- Tickets are still charged at to higher rate due to costs set by the operators. Therefore there are no reduced costs for buying a combined ticket
- Operators are still cautious of competition

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11.6. **Looking to the future:** Options for a Scotland-wide travel smart card which can be used across public transport networks are now being discussed. The Scottish Government has announced plans for a "Saltire Card" which would be similar to the London Oyster Card. The proposed card will be used on trains, buses, ferries, subway and trams. Transport Scotland are to work alongside operators, local authorities and regional transport partnerships on a number of demonstrator projects which are still to be announced. With the added advantage of the Scotland-wide concessionary bus travel scheme already using around 7,000 smart-enabled ticket machines. The introduction of demonstrator projects will utilise this existing technology. Those within the West of Scotland will see particular benefits in the run-up to the Glasgow 2014 Common Wealth Games.

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12. TransLink, South East Queensland – Australia

12.1. **Background:** The South East Queensland (SEQ) region extends from the Gold Coast to the Sunshine Coast and west beyond Ipswich. Rail, bus and ferry services are provided by 18 operators. The Queensland Government awarded the $134 million contract to design, build, operate and maintain the *go* card system to Cubic Corporation in July 2003. In mid-2004, TransLink introduced full fares and ticketing integration, improved service co-ordination and range of marketing communications. The full fares and ticketing integration resulted in the implementation of a new zonal fare structure and a range of fully integrated fare products delivered through existing fare collection equipment. In July 2006, TransLink signed up around 1,000 volunteers to trial the new smartcard system in the Redcliffe area. The go card was launched throughout Brisbane in February 2008, the *go* card was available at selected retail stores and Queensland Rail stations. It could also be accessed by phone or online.

12.2. **Card Features**

- Go card' is TransLink's electronic ticket that can be used on TransLink's network of bus, train and ferry services, including trains to the airport.
- The card is cheaper compared to the cost of a paper ticket and can be topped up electronically.
- Passengers can register their card to protect their travel balance if it is lost or stolen.
- Passenger must swipe their card at the beginning of their journey and check out at the end. The fare is then automatically deducted from the card balance.
- Passengers can transfer up to 3 times across all zones.

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- Passengers have 6 hours to complete their journey.
- The final trip of the journey must start within 3.5 hours of when the passenger started their first trip.
- There is a 1 hour time limit between transfers.

12.3. **Pricing Structure:** The Go Card operates over 23 designated zones. Fares are calculated at either an adult or concession rate and are based on the number of zones travelled through during the journey. The Go Card can be bought at over 580 locations, including many Queensland Rail stations, some busway stations, selected newsagents and 7-Eleven stores where the 'buy' symbol is displayed. Passengers can also top up the go card online, by phone, at a retailer or on board.

12.4. **Advantages:** This significantly impacted the demand for public transport services with:

- An increase of 9.7% in total public transport journeys in 2004/05 (i.e. trips increased from 123.9 million to 135.9 million; and
- Sustained growth continued in 2005/06, with total public transport journeys increasing by a further 11.6% (i.e. from 135.9 to 151.7 million trips). An analysis conducted by Booz Allen Hamilton in 2000, further isolated the impact of changes to fare levels to show the impact in SEQ to be:
- A patronage increase of around 3.5% could be attributed to the 'integration effect alone in 2005/06.20

12.5. **Issues:**

- Security experts found the cloning of a *go* card is possible - though no verified instances have yet been discovered. TransLink have indicated that systems exist to detect fraudulent activity and reject cloned cards.

- TransLink changed the fares, in January 2010, to make the *go* card cheaper than paper tickets, achieved by increasing the price of paper tickets. Although more users now using the *go* card than before, the move has created another issue with a limited number of train stations selling the *go* card, some users could not buy the *go* card and had to go on using paper tickets with higher fares. TransLink confirmed more stations will sell the *go* card in the future.
- A loophole was discovered that allowed *go* card users to avoid fares on buses by "touching off" at the back door after touching on at the first door, TransLink confirmed that doing this would waive the fare. In April 2010, during peak hours at major train stations, *go* card users found it very difficult to touch on and touch off against the waves of commuters. The issue was caused by the fact the *go* card fare gates are bi-directional instead of uni-directional.
- In July 2010 it was reported in major newspapers around Australia that people have had their movements tracked by using the card. It had turned out that Australian police had been accessing the Go Card records to find out about the movements of certain people.
- As of August 2010 Queensland Police were set to appeal to the state's privacy commissioner not to cut their access to the movements of Brisbane's commuters that were recorded on the Go Cards

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13. Factors for Consideration

13.1. According to the Verband Deutscher Verkenhrsunternehmen, the Association of German Transport Companies (VDV), public transport traveller numbers are expected to increase massively in the next decade. Both VDV and ITSO (a UK Government-backed, non-profit organisation developing the UK-wide technical specification for smart ticketing) agree that smart integrated ticketing that is integrated can play a significant role in managing this increase. Various challenges and lack of support have stifled progress in various regions of Europe. However, as demonstrated, there is a considerable amount of good practice in identifying and overcoming these challenges. Legislation and policies must continue to back the use of integrated through ticketing if it is to continue to succeed. However, obstacles to this could be defined as follows:

- Limited quantative data. This lack of market data must be able to demonstrate a positive cost-effective business case to operators
- Limited support from the private sector, competing operators can still be cautious towards integrated ticketing
- Cooperation in a difficult multi-stakeholder and competitive environment
- Difficulties in putting user needs regarding interchanges into practice
- Lack of a functioning and acceptable revenue sharing system for intermodal journeys

13.2. Success in the development and of an integrated ticketing system depends on many factors. Much of the challenge associated with the introduction of both integrated through ticketing and smartcard systems lies not so much in the technology itself, as in the business and political

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processes with the agreements necessary to allocate costs, payments and liabilities.

13.3. Our case studies demonstrate that there are a number of issues which, if properly addressed, can provide the best basis for successful cost-effective operation. However there are factors that one must always consider when establishing integrated through ticketing.

13.4. **Smartcards are not a simple solution**. The London Oyster has proved complex and expensive but successful. The HOPS system for Oyster is relatively simple in that all revenue accrues to TfL negating the need for a complex operator reimbursement mechanism for passenger fares related to use of the Oyster card. The installation of equipment on buses in Scotland has shown that the Scottish Entitlement Card has proven to be a more time consuming project although it has the potential for an operator reimbursement HOPS since operators are currently reimbursed for carriage of concessionary travellers on the basis of recorded journeys.

13.5. **Stakeholder Engagement and Governance.** Ensure that all stakeholders are involved and that their buy-in is achieved at the earliest time. This should be conducted in accordance with a governance group to agree policy and define business rules before committing to a specific technology approach. It is also important to keep in step with commercial operators and the technology industry.

13.6. **Awareness.** Keep stakeholders informed about the scheme as it is being built through marketing and education programmes. Inform the public of the reasons for the development of an integrated public transport ticketing scheme, its benefits to them and s simplicity of operation.

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13.7. **Acknowledgement of the Customer.** Customer satisfaction and take-up will dictate the success of any scheme. Passengers' expectations rise and dissatisfaction can result from those parts of the system aspects that are not integrated, such as the parts of the London rail network that do not accept Oyster, despite the increase in some fares as a result of zoning. It is important therefore, that the scheme best meets the capabilities and aspirations of the public why implies knowing you customer and taking their views into account, even to the extent of including customer representation in the governance group. The biggest customer service challenge around smartcards is that the customer needs to have absolute confidence that they will always be charged the right fare and that money is not going to disappear from their cards.

13.8. **Strategic Planning:** at the outset, make sure there is a clear picture of what the scheme is intended to address, as well as the criteria for success.

13.9. **Future Proof Design.** As with all areas of technology, the speed in which it changes is rapid. Systems evolve and offer new ways of working and improved cost benefits. It is important that the integrated transport ticketing schemes are designed from the outset to be able to adapt to such changes. Obvious advances in NFC-enabled mobile phones and credit cards should be kept in consideration. ITSO has even suggested that formats such as the common drivers licence could even be used to reward the users overall carbon footprint.

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