



## Public Transport Integration

Recommended Reading and Links

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## Preface

Travelling from A to B by public transport in any major city most often involves some kind of mode change. Whether it is from train to bus or from tram to metro, public transport users often have to switch their means of transport if no direct link is available between origin and destination.

While such transfers are necessary even in the most sophisticated transport networks, there are some principles that make a journey by different forms of public transport as seamless as possible. Summarized here under the term Public Transport Integration, these measures aim at facilitating the use of any public transport mode – be it bus, rail based services or even ferries – available in a city or region to reach one's destination. Prominent features of Public Transport Integration include, for example, one single ticket for the whole journey, adequate transfer facilities, and coordinated schedules of different transport modes.

Many cities and regions in developing countries are struggling to offer any viable and – an issue not to be neglected especially with regard to the urban middle class – comfortable alternative to individual motorized transport. Where the use of public transport is hampered by the coexistence of different non-integrated systems and operators, relying on different fare schemes and uncoordinated schedules, travelling by car or motorcycle may quickly be perceived as the most comfortable and fastest option. Even the most modern public transport systems may fail to attract the desired number of passengers if they are built as stand-alone solutions without integration in the overall public transport network. At the time when this compilation has been done, there are virtually no fully integrated public transport systems known in any developing city. In Germany citywide and later regional public transport integration stems back as long as 1965 with the first Transit Associations having been established in Hamburg and Munich. Since 20 or so years public transport in all cities and agglomerations in Germany is fully integrated.

This document aims at providing the reader with an overview of relevant literature on Public Transport Integration. Issues range from organizational and institutional aspects – e.g. how an integration of different operators can be achieved and which role authorities may play – to more technical aspects, such as the development of integrated ticketing systems. The reading list is organized as follows:

- General literature
- Case studies including includes best practices and projects from countries around the world
- Links to related projects, organizations and selected actors in the field of Public Transport Integration.

For more information on our work, please see the last page of this document and visit our page: [www.sutp.org](http://www.sutp.org)

## General Information on Public Transport Integration and related Research Publications

This chapter contains literature dealing with the issue of Integrated Public Transport from a more general or theoretical perspective, although most sources also refer to specific cases (cities) in one way or another.

### Citytransport (2009): **Transport Integration / Fare & Ticketing Systems**

[www.citytransport.info/Integ.htm](http://www.citytransport.info/Integ.htm) and  
[www.citytransport.info/Frameinteg.htm](http://www.citytransport.info/Frameinteg.htm)

This webpage offers comprehensive information on a wide range of aspects concerning public transport. The sections on transport integration and fare systems are a good point to start for an introduction on why and how an integrated transport system is of high importance. The basic principles are supplemented by best practice examples from Europe and beyond.

### Department for Transport (2009): **Smart and Integrated Ticketing Strategy**

[www.dft.gov.uk/pgr/regional/smart-integrated-ticketing/pdf/smart-ticketing.pdf](http://www.dft.gov.uk/pgr/regional/smart-integrated-ticketing/pdf/smart-ticketing.pdf)

This document sets out the Government's strategy for encouraging smart and integrated ticketing in England.

### Deutsches Institut für Urbanistik/Umweltbundesamt (2005): **Umweltfreundlicher, attraktiver und leistungsfähiger ÖPNV – ein Handbuch (Kurzfassung)**

(Environmental friendly, attractive and efficient Public Transport – a handbook)  
[www.umweltdaten.de/publikationen/fpdf-k/koepnv-kf.pdf](http://www.umweltdaten.de/publikationen/fpdf-k/koepnv-kf.pdf)

Although this document (in German language) is designed as a general guide towards sustainable Public Transport, the issue of integration (especially concerning the concept of the "Verkehrsverbund") plays an important role.

### Fox (2002): **World Bank Urban Transport Strategy Review – Mass Rapid Transit in Developing Countries**

[http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/uk\\_mass\\_transit\\_halcrow.pdf](http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/uk_mass_transit_halcrow.pdf)

This position paper provides an input to the World Bank Urban Transport Strategy Review. It considers the appropriate role for Mass Rapid Transit (MRT) in developing and transitional economies. MRT is defined to include bus and rail-based systems – busways, LRT, metros and suburban rail. The paper is based on the authors' experience, together with contributions from correspondents and comments from the World Bank, and DFID who financed the work. Chapter 12 of this document is specifically focused on Public Transport Integration.

Geelong Region Alliance (...): **G21 Integrated Public Transport Strategy**

[http://www.g21.com.au/index.php?option=com\\_docman&task=doc\\_download&gid=52&Itemid=11](http://www.g21.com.au/index.php?option=com_docman&task=doc_download&gid=52&Itemid=11)

This Integrated Public Transport Strategy considers the range of public transport options available to the G21 community (City of Greater Geelong, the Borough of Queenscliffe, Colac Otway Shire, Golden Plains Shire and Surf Coast Shire in Australia) and presents a staged plan for the improvement of the public transport system to better service the needs of residents and visitors. The report identifies strategies and short and long-term actions that provide direction for the future of public transport within the Region.

ITDP (2007): **Bus Rapid Transit Planning Guide**

[http://sutp.org/index.php?option=com\\_docman&task=cat\\_view&gid=108&Itemid=54&lang=&Itemid=197](http://sutp.org/index.php?option=com_docman&task=cat_view&gid=108&Itemid=54&lang=&Itemid=197)

This Planning Guide first provides an overview of the bus rapid transit (BRT) concept, including its definition and historical development. The Planning Guide then proceeds to give a step by step description of the BRT planning process. Part IV of the guide is devoted specifically to the topics of Modal Integration (Chapter 13) and TDM and land-use integration (Chapter 14).

James (2001): **Put the passenger first in integrated transport - Rapid transit review**

[http://findarticles.com/p/articles/mi\\_m0BQQ/is\\_9\\_41/ai\\_80931926/pg\\_3/?tag=content;col1](http://findarticles.com/p/articles/mi_m0BQQ/is_9_41/ai_80931926/pg_3/?tag=content;col1)

This article focuses on the needs of the passenger with regard to an integrated transport network. Key areas to consider include cooperation, information, ticketing, branding, and interchange design.

Knieps (2004): **Aufgabenträger oder Verkehrsunternehmen als Gesellschafter von Verkehrsverbänden?** (Institutional bodies or operators as shareholders for transport associations?)

[http://deposit.ddb.de/cgi-bin/dokserv?idn=972268936&dok\\_var=d1&dok\\_ext=pdf&filename=972268936.pdf](http://deposit.ddb.de/cgi-bin/dokserv?idn=972268936&dok_var=d1&dok_ext=pdf&filename=972268936.pdf)

This PhD thesis in German language looks at the different forms of Integrated Transport prevalent in Germany. It aims at identifying the concept operating most efficiently with regard to transaction costs.

Matas (2009): **Demand and revenue implications of an integrated public transport policy - The case of Madrid.**

[www.ecap.uab.es/RePEc/doc/wpdea0304.pdf](http://www.ecap.uab.es/RePEc/doc/wpdea0304.pdf)

This paper addresses – among others - the question if and how the introduction of an Integrated Fare System in 1986 contributed to the significant increase in public transport ridership in the Spanish capital. The results confirm the essential role of an integrated fare scheme for those cities that seek to increase public transport use.

Markantonakis et al. (2004): **Smart Card Technology in the Public Transport Industry**

in: *Secure Magazine - The Silicon Trust Report, February 2004, 1/2004, pp 26-29*

[www.scc.rhul.ac.uk/public/smart%20card%20centre+omnikey.pdf](http://www.scc.rhul.ac.uk/public/smart%20card%20centre+omnikey.pdf)

A quick overview of key features and issues to be considered in the Smart Card Technology, plus references to selected operating schemes.

NEA Transport research and training (2003): **Integration and regulatory structures in Public Transport**

[www.eltis.org/docs/INTEGRATION.pdf](http://www.eltis.org/docs/INTEGRATION.pdf)

This comprehensive report deals with several aspects of Integrated Transport. It outlines the general features of integrated transport services and explores the barriers to implement integration, the possible incentives for operators (both public and private owned), the possible implications that integration arrangements could have on the commercial decisions of operators and the possible regulatory powers held by the relevant authorities to address these issues. To complement the theoretical approach, the report draws from experiences of several European cities.

Petit (2007): **La mejora de la calidad en los sistemas de transporte público como pilar de una movilidad más sostenible** (Improving the quality of public transportation systems as a backbone for a more sustainable mobility)

<http://upcommons.upc.edu/pfc/handle/2099.1/5960>

<http://upcommons.upc.edu/pfc/bitstream/2099.1/5960/10/08.pdf>

In this document (only available in Spanish language), a model for improving public transport services defines quality targets and set the actions to be done based on the norm UNE-EN 13816. Chapter 6 contains a study case for Catalonia, Spain that focuses specifically on the integration of public transport services.

Prointec/World Bank (2000): **Urban Public Transport Systems - Integration and Funding**

[http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/pt\\_funding\\_prointec.pdf](http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/pt_funding_prointec.pdf)

This background paper prepared for the World Bank reports from experiences on Integrated Public Transport in several European cities, but also highlights some major obstacles for Public Transport Integration to be found in developing cities.

Pucher, Buehler (2009): **Integrating Bicycling and Public Transport in North America**

<http://www.nctr.usf.edu/jpt/pdf/JPT12-3Pucher.pdf>

This paper provides an overview of bike-transit integration in large American and Canadian cities. It begins with an analysis of national trends in bike-and-ride programs such as the provision of bike racks on buses, accommodation of bikes on rail vehicles, and bike parking at rail stations and bus stops. Most of the paper, however, is devoted to case studies of bike-transit integration in six large American cities (San Francisco, Portland, Minneapolis, Chicago, Washington, and New York) and two Canadian cities (Vancouver and Toronto).

Rosário Maurício Ribeiro Macário (2005): **Quality management in urban mobility systems: an integrated approach**

[www.civil.ist.utl.pt/nispt/ficheiros/teses\\_dout/RM\\_eng.pdf](http://www.civil.ist.utl.pt/nispt/ficheiros/teses_dout/RM_eng.pdf)

This PhD thesis explores the issue of quality management in Public Transport, starting from the hypothesis that the definition of the Urban Mobility System (UMS) goes far beyond the provision of public transport. Rather, it should entail all services, infrastructure and traffic management that in its whole enable citizens to satisfy their mobility requirements.

Thiemann-Linden, Klingberg (EURONATUR) (2001): **Innovation through Co-operation in Local Public Passenger Transport**

[www.umweltdaten.de/verkehr/downloads/Baukasten-en.PPT](http://www.umweltdaten.de/verkehr/downloads/Baukasten-en.PPT)

This document (PowerPoint slides) has been prepared by the European Nature Heritage Fund EURONATUR as part of a project supported by the German Federal Environment Ministry. The material provides an overview of the individual topics which are of importance in improving the cooperation and consultation between transport service providers. They were designed as slides and can thus be used for presentations and discussions. Comprehensive explanatory notes to each chapter covered by the slides can be found at the end of the presentation.

TravelSmart (2004): **Special Events Planning Resource Kit**  
[www.travelsmart.gov.au/events/fivea.html](http://www.travelsmart.gov.au/events/fivea.html)

Integrated ticketing systems are a very effective way of encouraging people to use public transport during major events. They tend to suit larger events, because of the complexity of setting up a scheme. This section provides some information about how to establish an integrated ticket scheme for an event.

TRB (2008): **Integration of Paratransit and Fixed-Route Transit Services**  
[http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp\\_syn\\_76.pdf](http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_syn_76.pdf)

The information gathered in this report includes documentation of policies and associated program features that have facilitated successful implementation of integrated services in the US context. These include eligibility screening processes, operational procedures, travel training, education and outreach, marketing, and technology. The experiences of systems that have explored the feasibility of integrated services and not proceeded with implementation, or have implemented and discontinued integrated services, also are documented.

VDV (2009): **Transport Alliances – Promoting cooperation and integration to offer a more attractive and efficient Public Transport**  
Köln, DVV Media Group. 305 Pages, colour images, flexcover,  
<http://www.vdv.de/publikationen/buecher.html>

This highly recommendable, bi-lingual book (German/English) summarizes the development of the German *Verkehrsverbund* system of transport alliances, often regarded as the first and most successful form of Integrated Transport. It offers information on aspects ranging from institutional issues to best practices in introducing an integrated fare system. A final chapter looks at transport alliances in the neighbouring countries of Austria and Switzerland.

Victoria Transport Policy Institute (2009): **TDM Encyclopedia**

Although there is currently no dedicated chapter on Public Transport Integration, several sections of the comprehensive online TDM Encyclopedia deal with aspects related to this issue. Among them are the following:

**Multi-Modal Navigation Tools** - Improving User Information for Walking, Cycling and Public Transit: [www.vtppi.org/tdm/tdm113.htm](http://www.vtppi.org/tdm/tdm113.htm)  
**Bike/Transit Integration**: [www.vtppi.org/tdm/tdm2.htm](http://www.vtppi.org/tdm/tdm2.htm)  
**Public Transit Improvements**: [www.vtppi.org/tdm/tdm47.htm](http://www.vtppi.org/tdm/tdm47.htm)

World Bank (2001): **The Challenge of Urban Government: Policies and Practices**  
[http://books.google.de/books?id=7-  
eoAPtApt0C&printsec=frontcover&dq=the+challenge+of+urban+government&  
source=bl&ots=9JV-RK3X\\_W&sig=Fj3mAltoCK0U4b4pydyp-  
XOZacc&hl=de&ei=-YzRS-  
DNEsqQsAbTw8HLDg&sa=X&oi=book\\_result&ct=result&resnum=1&ved=0CA  
4Q6AEwAA#v=onepage&q&f=false](http://books.google.de/books?id=7-<br/>eoAPtApt0C&printsec=frontcover&dq=the+challenge+of+urban+government&<br/>source=bl&ots=9JV-RK3X_W&sig=Fj3mAltoCK0U4b4pydyp-<br/>XOZacc&hl=de&ei=-YzRS-<br/>DNEsqQsAbTw8HLDg&sa=X&oi=book_result&ct=result&resnum=1&ved=0CA<br/>4Q6AEwAA#v=onepage&q&f=false)

This book contains contributions from different authors on different topics such as globalization and city management, local governance, urban environmental management and poverty reduction. Chapter 9 deals with the topic "Transportation and Metropolitan Growth" and contains a chapter on "Integration of Urban Transport and Urban Planning" written by Robert Cervero.

World Bank (2008): **Urban Transport for Development towards an Operationally-Oriented Strategy**  
[http://siteresources.worldbank.org/INTTRANSPORT/Resources/336291-  
1227561426235/5611053-1229359963828/tp\\_22\\_web.pdf](http://siteresources.worldbank.org/INTTRANSPORT/Resources/336291-<br/>1227561426235/5611053-1229359963828/tp_22_web.pdf)

Case 6 "Colombia – Integrated Mass Transit Systems Project" gives a short example of integrated mass transit systems in a developing country.

## Case Studies

Documents in this section illustrate concepts pursued by different cities, regions and stakeholders to achieve the final goal of an Integrated Public Transport system. They are sorted by geographic region, and comprise anything from urban planning documents to articles in journals.

### *Africa*

Davey (2006): **RSA ITS research & development**  
[www.simbaproject.org/download/south\\_africa/ddavey%20presentaion%20on%20ITS%20in%20RSA.pdf](http://www.simbaproject.org/download/south_africa/ddavey%20presentaion%20on%20ITS%20in%20RSA.pdf)

This presentation contains a small chapter on Integrating Public Transport in the South African context, with special regard to the use of ITS technologies.

N.N (...): **Durban pioneers integrated public transport**  
[http://sadelivery.co.za/files/back\\_issues/delivery/Edition2/transport1.pdf](http://sadelivery.co.za/files/back_issues/delivery/Edition2/transport1.pdf)

A short article on Durban's efforts to create an Integrated Public Transport system.



Prinsloo (2008): **Integrated ticketing system could assist SA transport network**  
[www.engineeringnews.co.za/article/integrated-ticketing-system-could-assist-sa-transport-network-2008-09-12](http://www.engineeringnews.co.za/article/integrated-ticketing-system-could-assist-sa-transport-network-2008-09-12)

Article about the implementation of an integrated ticketing system for all modes of public transport in South Africa.

Van Zyl (2008): **Attractive methods for tracking minibus taxis for public transport regulatory purposes**  
<http://hdl.handle.net/10204/2454>

This paper deals with the regulatory integration of minibuses in the overall public transport system, an issue of high importance in many African countries.

## **Asia**

Ahmad (2009): **Evaluation of Public Transportation in Penang with Suggestions for Improvement**  
<http://transitmy.files.wordpress.com/2009/03/report-for-penang-state-government.doc>

Better integration among different operators and modes of public transport plays an important role in this report for the Penang State Government.

Chen, Lin (2005): **Evaluation Analysis on an Integrated Fare Initiative in Beijing**  
Journal of Public Transportation, Vol. 8, No. 3  
<http://www.nctr.usf.edu/jpt/pdf/JPT%208-3%20Chen.pdf>

This article presents an evaluation framework for an integrated fare initiative in Beijing. It explores a new set of 10 evaluation indices, which include public acceptance, social equity, convenience, change of subsidy, possibility of modal integration, feasibility of implementation, change of revenue, change of ridership, improvement of operation control, and change of cost. The framework is implemented by combining the method of multiple criteria fuzzy decision with the analytic hierarchy process (AHP).

Luk, Olsewski (2003): **Integrated public transport in Singapore and Hong Kong**  
[http://findarticles.com/p/articles/mi\\_qa3927/is\\_200312/ai\\_n9318847](http://findarticles.com/p/articles/mi_qa3927/is_200312/ai_n9318847)

This paper describes the activities in integrated public transport in Singapore and Hong Kong. These activities are in the form of physical, network, fare, information and institutional integration. The paper discusses the issues involved, including those related to an ageing population problem.

Najman (2003): **Asian cities switch to contactless smart cards**

[http://findarticles.com/p/articles/mi\\_m0BQQ/is\\_1\\_43/ai\\_99555310/](http://findarticles.com/p/articles/mi_m0BQQ/is_1_43/ai_99555310/)

This informative article looks at efforts of various Asian cities to better integrate their different means of public transport through fully-contactless smart card automatic fare collection (AFC) systems.

SERI (2007): **RapidPenang – The First Step Towards Integrated Public Transportation System in Penang**

<http://www.seri.com.my/v2/files/Economic%20Briefing%20-%20Pg%20Econ%20Rept/EconBrief2007-10.pdf>

This article reports on the introduction of the RapidPenang bus service, which has become the first step of a proposed integrated transport service in Penang, Malaysia.

## **Europe**

AED – Direction de la Politique des Déplacements (2003): **Integration and regulatory structures in public transport: Case study – Brussels Capital Region**

[www.emta.com/IMG/pdf/integration\\_case\\_study\\_of\\_the\\_Brussels\\_region.pdf](http://www.emta.com/IMG/pdf/integration_case_study_of_the_Brussels_region.pdf)

This paper illustrates the obstacles on the way towards a fully integrated transport system in the Brussels region.

Berlepesch (2006): **Urban Transport Integration - The case of Frankfurt-RheinMain Transport and Tariff Association**

[www.cleanairnet.org/saopaulo/1759/articles-71037\\_resource\\_4.pdf](http://www.cleanairnet.org/saopaulo/1759/articles-71037_resource_4.pdf)

A case study from Germany, illustrating the development of an Integrated Public Transport system in the city of Frankfurt/Main.

CAPTA (...): **Integrating Public Transport**

[www.caovd.cz/IndexEN.htm](http://www.caovd.cz/IndexEN.htm)

Czech Association of Public Transport Authorities acts as a representative of the public transport authorities/organisers (companies owned by regions or cities) that are responsible for organising and co-ordinating integrated public transport systems in specific areas in the Czech Republic. On its homepage, it offers an informative introduction on the issue in the Czech context.

Cristóbal-Pinto (2003): **Madrid: A Bet on Public Transport for sustainable mobility**

[www.inro.ca/en/pres\\_pap/european/eeug02/consorcio.pdf](http://www.inro.ca/en/pres_pap/european/eeug02/consorcio.pdf)

This presentation reports on the progress made in establishing an Integrated Public Transport system in Madrid. It covers three aspects of integration – administration, fare system and multi-modal integration.

Dumitrescu et al. (2004): **Integrated Ticketing and Information System of the Mass Transport in Bucharest**

[www.codatu.org/english/publications/proceeding/conference/codatu11/Papers/dumitrescu.pdf](http://www.codatu.org/english/publications/proceeding/conference/codatu11/Papers/dumitrescu.pdf)

This short informative paper gives an overview of the concept of Integrated Public Transport established in the Romanian capital.

ELTIS (2008): **Introduction of the Unique Ticket (integrated ticket) in the region of Asturias, Spain**

[www.eltis.org/PDF/generate\\_pdf.php?study\\_id=2028&lan=en](http://www.eltis.org/PDF/generate_pdf.php?study_id=2028&lan=en)

A short summary of the process aiming at the introduction of a unique ticket for all modes to be used within the region of Asturias.

ELTIS (2008): **Easing Public Transport in Izmir: The Kentkart Travel Pass**

[www.eltis.org/PDF/generate\\_pdf.php?study\\_id=2011&lan=en](http://www.eltis.org/PDF/generate_pdf.php?study_id=2011&lan=en)

An introduction to the Kentkart travel pass, which has evolved since its launch in 1999 to include not only travel on the buses in Izmir, but also the ferries and the new metro and possibly the commuter rail system on the Izmir Peninsula.

ELTIS (2007): **Smart Cards in Lisbon – The Lisboa Viva Card and the 7 Colinas Card**

[www.eltis.org/study\\_sheet.phtml?study\\_id=1345&lang1=en](http://www.eltis.org/study_sheet.phtml?study_id=1345&lang1=en)

In 2001 the Metropolitano de Lisboa installed a new ticketing and access control system to the city's public transport network, which required a major change in the ticketing system, involving the introduction of magnetic tickets and contact less cards.

ELTIS (2006): **Bremen's Integrated Mobility**

[www.eltis.org/docs/studies/Bremen\\_s\\_Integrated\\_Mobility.pdf](http://www.eltis.org/docs/studies/Bremen_s_Integrated_Mobility.pdf)

This informative document provides an overview of the different elements forming part of Bremen's efforts to integrate all modes of public transport, including car-sharing and cycling.

**ELTIS (2004): Integrated train and bus stations in Northern Ireland**

[www.eltis.org/study\\_sheet.phtml?study\\_id=657&lang1=en](http://www.eltis.org/study_sheet.phtml?study_id=657&lang1=en)

An overview on the efforts to provide integrated train/bus stations to the highest possible quality and to international standards, commensurate with available financial resources.

**ELTIS (2004): Electronic ticketing smartcard for the public transport system (EBIT) in Trondelag, Norway**

[www.eltis.org/study\\_sheet.phtml?study\\_id=1897&lang1=en](http://www.eltis.org/study_sheet.phtml?study_id=1897&lang1=en)

An introduction to the electronic ticketing system in the Trondelag region, which assures that anybody travelling by public transport inside the county, irrespective of company or mode of transport, is able to pay for the ticket with one and the same "smart card".

**EMTA (2003): Integrated Public Transport System in Barcelona**

[www.emta.com/IMG/pdf/Surveys\\_integration\\_Barcelona\\_case\\_study.pdf](http://www.emta.com/IMG/pdf/Surveys_integration_Barcelona_case_study.pdf)

This paper takes a closer look at institutional and organizational issues in Public Transport Integration in Barcelona, Spain.

**EST/CIVITAS (...): Integrated ticketing and tariffs in Krakow**

[http://fr1.estis.net/sites/esteastpl/default.asp?site=esteastpl&page\\_id=07C2F251-B1D4-49E2-946F-493008B7A935](http://fr1.estis.net/sites/esteastpl/default.asp?site=esteastpl&page_id=07C2F251-B1D4-49E2-946F-493008B7A935)

Integrated ticketing and tariffs are only currently available within the city area of Krakow, Poland. There is no integrated ticketing between railway and other transport modes available. Within the measure Krakow will perform a test of an integrated ticketing and tariff solution between the local public transport and the national railway on the corridor Krzeszowice - Krakow.

**Havlik (...): Integrated public transport systems in the Czech Republic**

[www.sputnicproject.eu/meetings/1wgmeeting/Market%20Organisation/presentations/PT\\_CzechRepublic\\_Havlik.pdf](http://www.sputnicproject.eu/meetings/1wgmeeting/Market%20Organisation/presentations/PT_CzechRepublic_Havlik.pdf)

See also the related case study on ELTIS:

[www.eltis.org/PDF/generate\\_pdf.php?study\\_id=2059&lan=en](http://www.eltis.org/PDF/generate_pdf.php?study_id=2059&lan=en)

A presentation on an Czech example of Public Transport Integration in the southern Moravia region, around the City of Brno.

Pucher, Kurth (2006): **Verkehrsverbund: The success of regional public transport in Germany, Austria and Switzerland**  
in: Transport Policy, Vol. 2 No.4, pp. 279-291. Available online for subscribers.  
<http://ideas.repec.org/a/eee/trapol/v2y1995i4p279-291.html>

Five case studies of *Verbund* systems form the basis of this article: Hamburg, Munich, Rhein-Ruhr region, Vienna and Zurich. The article documents the success of each *Verbund* in attracting more public transport riders or at least stabilising public transport's share in the modal split. It also analyses the reasons for success.

Scottish Government (2003): **Transferability of Best Practice in Transport Policy Delivery – Final report**  
[www.scotland.gov.uk/Publications/2003/08/17895/23882](http://www.scotland.gov.uk/Publications/2003/08/17895/23882)

Although this report does not directly address Public Transport Integration, the issue plays an important role in the review of best practices from various countries in Europe and North America.

Scottish Government (2004): **Integrated Ticketing in Scotland – Needs Analysis and Options**  
[www.scotland.gov.uk/Resource/Doc/26800/0026582.pdf](http://www.scotland.gov.uk/Resource/Doc/26800/0026582.pdf)

This comprehensive report provides evaluates strategies for the introduction of an integrated ticketing system in Scotland, drawing from a theoretical framework and several case studies. It includes a large section on best practices.

Trendsetter (2005): **Evaluation Report - Integrated Pricing Strategies (WP6)**  
<http://213.131.156.10/xpo/bilagor/20060119170324.pdf>

As part of the European CIVITAS Initiative, the Trendsetter project aimed at improving mobility, air quality and quality of life while reducing noise pollution and traffic congestion. This Work package Evaluation Report gives an overview of the measures and the results achieved in WP6 – Integrated Pricing Strategies. With regard to Integrated Public Transport, the experiences of Lille and Stockholm in introducing Smart card systems and integrated ticketing may be of interest for the reader.

Van der Gaag/AET (2003): **Public Transport Integration Project Gelderland East**  
[www.etcproceedings.org/paper/public-transport-integration-project-gelderland-east](http://www.etcproceedings.org/paper/public-transport-integration-project-gelderland-east)

This paper studies the effects of the Public Transport Integration Project in the Dutch province of Gelderland. The solution implemented by local stakeholders centres around an integrated operation of bus and train services by one single operator.

Vorarlberg (...): **Vorarlberg integrated transport system**  
[www.vorarlberg.gv.at/english/vorarlberg-english/economy\\_transport/transport/publictransport.htm](http://www.vorarlberg.gv.at/english/vorarlberg-english/economy_transport/transport/publictransport.htm)

A quick introduction in English language on the Integrated Transport System in the Austrian region of Vorarlberg, with further information being available in German language.

## ***South America***

Hidalgo/ EMBARQ (2009): **Citywide Transit Integration in a large city: The case of Sao Paulo, Brazil**  
[www.gobrt.org/SaoPauloTRB2009Hidalgo.pdf](http://www.gobrt.org/SaoPauloTRB2009Hidalgo.pdf)

This informative presentation about the Public Transport system in Sao Paulo contains a short section dealing with the “São Paulo Integrated System”.

N.N. (2003): **Efficient transportation for successful urban planning in Curitiba**  
[www.solutions-site.org/artman/publish/article\\_62.shtml](http://www.solutions-site.org/artman/publish/article_62.shtml)

Description of the development of the transportation system in Curitiba and the creation of the inter-district routes and the implementation of the Integrated Transportation Network along with the unified fare (go to **Solving The Fare Problem**).

Transantiago (...): **Public Transport plan for Santiago, Chile**  
[www.foreigninvestment.cl/archivos/noticias/19482058,2866669145739Transantiago.pdf](http://www.foreigninvestment.cl/archivos/noticias/19482058,2866669145739Transantiago.pdf)

One of the main goals of the Transantiago Plan for the Modernization and Integration of Public Transport Services is to offer a fully integrated Public system, including a standardised fare system.

## **North America**

CEIT (...): **Programa de Integración y Modernización del Transporte** (Feasibility study for the integration and modernization of the public transport project in Guadalajara, Mexico)  
<http://www.ceit.jalisco.gob.mx/index.html>

The study (only available in Spanish) focuses in the analysis of the operation and administration of the public transportation system in Guadalajara Metropolitan Area (GMA). The different actors in the arena are analyzed and then solutions for the integration and modernization of the public transport are delivered. Technical solutions and organizational measures consider the actual feasibility and affordability by the state.

Mara (2009): **Bay Area universal transit card stalls**  
<http://www.contactlessnews.com/2009/06/15/bay-area-universal-transit-card-stalls>

A recently published informative newspaper article dealing with the strenuous efforts to introduce an integrated fare system in the San Francisco Bay area.

## **Links to other useful webpages**

Department for Transport (DfT): **Competitively priced integrated ticketing**  
<http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/pgr/regional/buses/bpf/competitivelypricedintegrate3527>

In 2003 a Task and Finish Group looked at the issues surrounding Competitively Priced Integrated Ticketing and ways of encouraging the wider introduction of such schemes. The Group has produced a number of template agreements and guidance notes for a number of different scenarios which are meant to encourage and simplify the introduction ticketing schemes.

ELTIS: **European Local Transport Information Service**  
[www.eltis.org](http://www.eltis.org)

ELTIS is an initiative of the European Commission's Directorate General for Energy and Transport. The project is led by an international team of transport related organisations. The aim of ELTIS is to provide information and support a practical transfer of knowledge and exchange of experience in the field of urban and regional transport in Europe. It offers a number of case studies on Public Transport Integration, in addition to those already cited above.

**EMTA: Association of European Metropolitan Transport Authorities**

[www.emta.com](http://www.emta.com)

The Association of European Metropolitan Transport Authorities (EMTA) was created in 1998 so as to form a venue for exchange of information and best practices between the public authorities responsible for planning, integrating and financing public transport services in the large European Cities. Ten years after its creation, it now brings together 31 such authorities, responsible for improving the mobility conditions of some 70 million European city dwellers.

**TRB: Transportation Research Board**

[www.trb.org](http://www.trb.org)

The TRB is a division of the US National Research Council — a private, nonprofit institution providing services to the government, the public, and the scientific and engineering communities. Its homepage offers information on wide range of publication available, including several addressing the issue of Public Transport Integration. Most of these publications are available only upon purchase.

**UITP: International Association of Public Transport**

[www.uitp.org/Public-Transport/organising-authorities/index.cfm](http://www.uitp.org/Public-Transport/organising-authorities/index.cfm)

[www.uitp.org/Public-Transport/marketing/index.cfm](http://www.uitp.org/Public-Transport/marketing/index.cfm)

The UITP is the international network for public transport authorities and operators, policy decision-makers, scientific institutes and the public transport supply and service industry. It offers a wealth of information on a wide range of issues. Linked above are two pages containing information related to the issue of integrating (and branding) public transport. More information may be found by exploring the UITP homepage.



## **GTZ – Sustainable Urban Transport Project (SUTP)**

Based on more than 25 years of practical experiences, GTZ hosts the “Sustainable Transport: A Sourcebook for Policy-Makers in Developing Cities” ([www.sutp.org](http://www.sutp.org)) with a wealth of information and knowledge on appropriate solutions in urban transport. At present 26 modules are available, more being under preparation. Through training and advisory services, decision makers in the transport sector and transport planners have the opportunity to be better informed about sustainable transport options, about better mobility management and transport related emissions and their impact on quality of life, economic competitiveness and on transport related implications on climate. This may lead to improved urban transport systems, reduced traffic and better alternatives to using cars or motorized two-wheelers.

This flagship publication “Sustainable Transport: A Sourcebook for Policy-Makers in Developing Cities” compiles most international practices and provides access to numerous other resources. It is complemented by training courses targeted to policymakers, planners or engineers in cities, regional entities and federal governments.

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