

Pricing Urban Transport

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Welcome to the second issue of the European Transport Pricing Initiative Newsletter

CUPID - The Update

The CUPID Consortium has now completed two important deliverables. The first, a State of the Art Review presented as a series of Frequently Asked Questions, is already available on www.transport-pricing.net. The second, a general Evaluation Framework for urban transport pricing schemes, has been developed in partnership with the PRoGRESS cities. A draft of this Deliverable has now been agreed and will be made publicly available on www.transport-pricing.net following EC approval. The Evaluation Framework, which is based on the work of the MAESTRO Consortium (www.europjects.ie/maestro) will be refined and validated during the course of the PRoGRESS demonstrations, and a final version will be published towards the end of the CUPID project.

Workshops on Acceptability of Pricing and Social Equity took place in Edinburgh in October 2000, and in Trondheim in April 2001, and a third workshop on Legal Barriers and Media Handling will take place in Helsinki in September 2001. The next Workshop will take place in April 2002 in Rome and will address implementation issues. The Workshop papers will be made available for downloading from www.transport-pricing.net.

The CUPID Consortium will maintain close contact with the EC network on Implementation of Marginal Cost Pricing (IMPRINT-EUROPE) and other ongoing EC initiatives, and is currently preparing a series of Member State Reports summarising relevant activities in each State.

Access Control: Road Pricing in the Broader Context of Urban Mobility Management *The Experience in Rome*



On-Board Unit

Automated access control has been in operation since 11 August and full enforcement against violations will be in place by the end of the year. Access control in Rome has experienced important developments since its inception in 1989. From manual checks, the Limited Traffic Zone (LTZ) has been equipped with an automatic access control system capable of detecting all vehicles, identifying authorised vehicles via a radio frequency link, managing lists of authorised vehicles and proceeding against infractions. It is worthwhile highlighting that the On-Board Unit (OBU) does not only allow access to the LTZ but also to parking payment and the toll road system of the Italian highway network (TELEPASS).

Access control gate in Rome city centre



Technical and regulatory obstacles have been solved to allow high-level performance of the system. The transition from pilot to full-scale implementation required better integration among system components, improvements to the automatic identification of plates, safety of smart card payment, visual impact of the automatic gates, flexibility of the permit management system and respect of citizens' privacy. From the institutional side, a clear definition of authorities' and agencies' roles at the local level was required. At the same time, the use of remote traffic control systems had to be regulated at the national level.

Pricing private car use in urban centres responds to policies adopted at the international level both by the European Union and the OECD¹. At the national level, the Italian Ministry for the Environment has dedicated particular attention to transport externalities, although not tackling urban road pricing directly. At the local level, STA - the Mobility Agency of the City of Rome - is in charge of

implementing and assessing road pricing in the framework of the EU-funded PRoGRESS project. Great care is currently being put into the dynamic model forecasting impacts of road pricing scenarios. The model can be complemented with additional modules aimed at anticipating socio-economic impacts of road pricing thus going beyond transport, as it is structured to support the city government decision-making process.

The approach adopted in the PRoGRESS project is certainly embedded in the system vision of agencies and authorities in Rome to solve the city's mobility riddle² by balancing transportation market distortions and internalising transport-related externalities along with the provision of attractive mobility alternatives and better accessibility to the city.

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¹European Commission, *Fair Payment and Infrastructure Use: a Phased Approach to a Common Transport Infrastructure Charging Framework in the EU*, White Paper, COM (1998) 466 final, 1998 European Conference of Ministers of Transport (ECMT), *Efficient Transport for Europe: Policies for Internalisation of External Costs*, Paris, 1998

²This integrated approach is in line with the guidelines of the *General Plan on Urban Traffic (PGTU, Piano Generale del Traffico Urbano)*, adopted on 28 June 1999 and the analysis carried out in the *Integrated Mobility Programme (Proimo, Programma Integrato per la Mobilità)*, recently presented by the Municipality of Rome and STA

For more information on CUPID, PRoGRESS and urban transport pricing issues visit www.transport-pricing.net



Traffic Centre is at the road users' service 24/7. Realtime information on driving conditions, accidents, congestion, road maintenance etc.

Helsinki - Why We Want To Be Part Of PROGRESS

Road pricing proposals have been developed for the Helsinki Metropolitan Area (HMA) a number of times in the past, the most serious of these being in 1993. All proposals were however discarded before reaching the final political decision-makers as a result of political and public opposition.

However, a "low profile" interest among the core authorities and transport planning experts has kept the issue very much alive and Helsinki has been an eager participant in many European projects concerning transport pricing in recent years. It therefore seemed natural that the city should take part in the

PROGRESS project.

Helsinki's participation in the projects has provided us with vital knowledge about the expected impacts of transport pricing on traffic, land-use, environment, etc. and technical issues. The technical and functional feasibility of implementing a road pricing system, which is designed to achieve an efficient network and demand management, is now the main area of focus.

The timing of PROGRESS seems ideal in the light of the latest developments at the national level. The primary objective of improving the

efficiency of the network and demand management has not yet been a major issue in Finland. However, it seems now that the lack of financing for infrastructure investments has increased the awareness of "the user pays" principle and of road pricing as a means of implementing this principle. The strong support of the European Commission pushing this issue forward cannot be underestimated either.

After some consideration, Helsinki decided not to carry out an actual demonstration at this point in time. Instead, the city's participation in PROGRESS is being seen as

an ideal step towards developing and implementing a demonstration sometime in the future.

Ring Road 1 is one of the most congested arterial roads during the peak hours.



PROGRESS Co-ordination

With the PROGRESS project 14 months old, five of the eight partner cities have begun to implement their road pricing demonstration schemes – Copenhagen, Genoa, Gothenburg, Rome, and Trondheim – both in the form of trials and "real" schemes.

The second project meeting was held in Trondheim in April 2001, both for PROGRESS management and a Joint Steering Committee with CUPID. There was discussion on the development of deliverables (see below), and there were workshops on evaluation and social equity in transport pricing.

Two deliverables were submitted to the Commission in May 2001. The first of these was D2, Local Evaluation Plans, laying out the proposed evaluation activities for each city. The other was D3.1, Draft Scheme Design Specifications, in which the proposed demonstration scheme for each site was presented, along with how this had been developed.

All the cities have developed project evaluation, with a variety of survey work and consultation being undertaken. Model development for design specification and expected scheme impacts has also been a major activity in the cities.

The project website has been improved and expanded to include further information on the cities and their activities in PROGRESS. For more information, visit www.project-progress.org

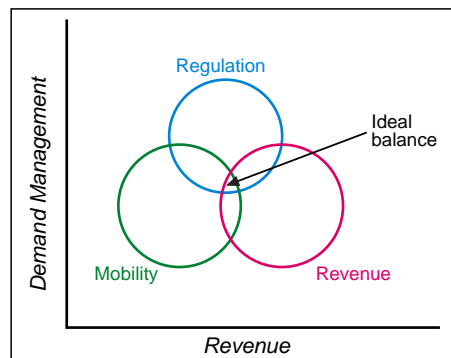
ACCEPTANCE & EQUITY VITAL TO SUCCESS

Twice a year the CUPID and PROGRESS consortia meet to discuss project progress and to take part in joint technical sessions including a workshop. The workshop, led by CUPID, explores issues of practical interest to the PROGRESS cities as they go through the process of designing, implementing and evaluating urban transport pricing schemes.

The topic of the first workshop in Edinburgh in October 2000 was the Social Acceptance of Urban Road Pricing. Professor José Viegas of TIS (Portugal) looked at pricing as a contrasting but complementary measure to 'rationing' in traffic management. He also considered some of the fears associated with urban transport pricing and how schemes can be designed and promoted to minimise these. Jens Schade of the Technical University of Dresden listed the four key groups to be targeted in the campaign to win acceptance and gave a five-point approach to winning acceptance. Terje Tretvik of SINTEF (Norway) in recounting the process to win

acceptance which had been used in Trondheim, highlighted the balance of the three elements which should comprise the objectives of a road pricing scheme: mobility (elimination of congestion), benefits (the revenue and what can be purchased) and regulation (the environmental benefits of traffic control).

Figure 1: Balance of Priorities



mitigate any potentially negative impacts. Professor Stef Proost from the Catholic University of Leuven (Belgium), in considering equity from an economist's viewpoint, considered equity versus efficiency and proposed a pricing reform of transport. Lastly, Odd Larsen from the Centre for Transport Economics in Norway gave his view of the Trondheim tolling system from the economist's point of view.

The timetable for future meetings is as follows:

The theme for the second meeting held in April in Trondheim was Social Equity. Professor Peter Jones of the University of Westminster (UK) examined spatial and social equity issues in particular and how the scheme design and/or revenue can be used to

Helsinki	Autumn 2001
Rome	Spring 2002
Copenhagen	Autumn 2002
Genoa	Spring 2003
Gothenburg	Autumn 2003

The Helsinki workshop will address legal obstacles and PR issues.

Implementing Pricing Reform in Transport

DG TREN has commissioned Leeds University, in collaboration with ISIS (Italy), FAV (Germany), TNO (Netherlands) and the Government Institute for Economic Research (Finland), to undertake a strategic review of transport pricing policy research. The project, known as IMPRINT-EUROPE (Implementing Pricing Reform in Transport – Effective Use of Research on Pricing in Europe), will involve a series of 5 high profile, international seminars where the needs of policy-makers and the findings of research will be synthesised and debated by European and national level policy-makers, representatives of the transport industry, academics and other stakeholder groups. These debates will aid the project consortium in developing recommendations on how to implement fair and efficient prices. IMPRINT-EUROPE will work closely with related projects such as CUPID and MC-ICAM.

"The series of seminars provide an excellent opportunity to bring all the major transport stakeholders in Europe together in order to take the debate forward and we invite those interested in getting involved to contact us", said Professor Chris Nash, the project co-ordinator.

The first of the seminars, this autumn, will examine recent European and national policy developments and research findings, including:

- The EU White Paper on 'Fair Payment for Infrastructure Use'.
- The provisions within the UK Transport Act 2000 enabling UK cities to introduce urban road pricing.
- The public and political acceptability of changing how we pay for transport.
- The implications for land-use planning and other strategic policies.

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The French Connection

Legal situation and institutional structure regarding urban transport pricing

Tolling has been used as a measure in France since the end of the 1950s to develop the French inter-urban motorway network; transport pricing has not however usually been implemented in urban areas. Before 1985 only the national government was allowed to establish road tolls on motorways. Since this time, local authorities have been able to implement road pricing, but only for bridges and tunnels, and only for infrastructure financing. New forms of urban transport pricing, such as cordon or distance pricing are not yet possible.

France currently lacks an institutional structure which could both operate the scheme and use the revenues for investing in other transport modes. Public transport has been the responsibility of the local authorities since the beginning of the eighties. The decision-making power for the highways is divided between three levels: at municipality, département (county) and national. Each level is responsible for its own network.

The French tradition is voluntary co-operation between authorities which have interest and authority in a certain field. Public/private partnerships are also very common.

Urban transport pricing in France had an unpromising start in the 1990s. In Toulouse, an existing national road was transformed into a tolled motorway in 1996. However, former users of the road and the local population fought the move vehemently and the toll plaza was eventually removed. The local authorities had to buy back the stretch of road from the concessionaire. In 1997, a toll became operational on the northern part of the ring road in Lyon. Once again, this action was very unpopular and the mayor of Lyon was forced to suspend toll operations on the extremities of the speedway.

Since then 3 successful urban transport pricing schemes have got underway:

- In the Paris region, the A14 Highway enables population



*Autoroutes Paris-Rhin-Rhone
(kind permission of Carole Barriquand-Treuille)*

living in the western part of the region to reach the city centre easily.

- In Marseille, the "Prado-Carénage tunnel", opened in 1993, is built on an old railway line and links the centre of the city to the eastern part of the urban area.
- In Lyon, two tunnels on the new northern part of the ring road are tolled, providing a speedy link between the western and the eastern parts of the urban area.

In 2000, the three cities of Lyon, Grenoble, and St Etienne launched a common study on mobility financing

and pricing, concerning all modes. Urban transport pricing, as well as other scenarios (cordons, vignettes, distance pricing, etc) are being considered.

Looking to the future, a section of the A86 outer ring road, below the Forêt de St Germain, to the west of Paris, is being built under concession and will be tolled. It is due to open in 2008.

Further information can be found on Certu's website (www.certu.fr/transport). The transport economic laboratory, LET (laboratoire d'économie des transport) has also published a number of useful publications (see www.ish-lyon.cnrs.fr/let).

making PROGRESS

Bristol

Development of the road user charging scheme is continuing in the city. In the last 6 months, a contract for the detailed design development has been let to a consortium led by WS Atkins. The study will assess the impacts of Bristol's proposed road user



Bristol Cathedral

charging scheme in association with a package of transport measures including Light Rapid Transit. New transport models will be developed, providing output that will help Bristol City Council and the UK National Government appraise the scheme and its implications. As part of the Charging Development Partnership, work is continuing on the development of guidance and policy.

For use in the study and in PROGRESS evaluation, a large amount of new data collection has been undertaken, including 29 roadside interview surveys asking drivers about their travel patterns, and over 700 Stated Preference surveys in the city centre on road user charging.

Following the Local Transport Plan settlement letter in December 2000, funding has been provided for the further development of complementary measures such as improved bus services, Park and Ride, and public transport information. Consultation is also continuing with local stakeholders and the public, but also with national organisations.

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Copenhagen

The main goal for the Copenhagen trial is to investigate the likely impact of different road pricing schemes on travel patterns. The central activity will be a field trial with some 400 volunteers driving under simulated road pricing conditions. The demonstration is planned to start in September and run for nearly 9 months.

To simulate the road pricing a new on-board unit using satellite positioning has been developed and will be installed in the volunteers' cars. The supplier of the on-board unit has been selected as a result of a tendering process and a few prototypes of the unit underwent field testing in July.

On the organizational side, the preparatory work for the demonstration include: the final definition of 3 different pricing schemes to be tested, the selection of the 400 trial volunteers, defining the data collection and processing for evaluation of the trial, testing the technology for the trial and preparing the installation of on-board units.



Prototype of On-Board Unit used in the Copenhagen trial



Edinburgh's Royal Mile

Edinburgh

Edinburgh's congestion charging scheme has yet to be fully defined, but it is likely to be based on a city centre cordon and will probably use vehicle number plate recognition technology. At present it is thought that charges will only be made for inbound movements on a "once per day" basis, regardless of how many cordon crossings a vehicle makes during the charge period. It is also proposed that any charges should only be applied Monday to Friday.

Further consultation will take place later this year with the public, stakeholders and other interested parties to define the form that any scheme should take. This should finally clarify the location and extent of the proposed charging cordons or zones, the daily times of operation, the level of charge and whether any particular type of vehicle or user should be exempt from the charge. It will also allow statutory traffic orders to be advertised.

Genoa

Over the last few months, Genoa's PRoGRESS activities have focused mainly on two aspects, technical and political. On the technical front, the pricing area has been defined in line with the future development detailed in the Urban Traffic Plan; the design has been specified and the location of the six gates confirmed; the supplier has been chosen and the installation of the gates is due to begin in October once the scheme is formally approved by the Town Council.

On the political issue, discussions concerning approval continue within the Town Council. Certainly this step won't be easy, but the press has recently highlighted the Mayor of Milan's intention to develop a road pricing system to protect the historical centre and reduce the traffic congestion. This is expected to have a positive and constructive effect on the political debate in Genoa because, while Genoa is managed by a centre-left coalition, Milan is a metropolitan town managed by a conservative local authority, which

means that it will be more difficult for the opposition party in Genoa to object to the project.



"Piazza De Ferrari" square in the heart of the city centre, that will be protected by the road pricing.

Gothenburg

The single most important goal of the Gothenburg site is to pinpoint the most probable impacts and impediments of different road pricing systems. Thus, comprehensive work has been undertaken to draw up an evaluation plan which ensures a field trial output that provides knowledge on user reactions in terms of attitudes, price elasticities and the intentions and possibilities of choosing different departure times, destinations and means of travel. The recruitment of volunteers has started, and will continue during the forthcoming months.

A completely new system is to be developed at the site using satellite positioning and mobile communications. All technical specifications have been finalised, and just recently, the very first

prototype was delivered. The pricing strategies to be tested by the test drivers will consist of congestion charging and environmental charging. The field trial will be underway in 2002 and the evaluation will take place in 2003.



Test drivers from the whole of Gothenburg will participate in the field trial.

Helsinki

Helsinki is not carrying out a live demonstration like the other PRoGRESS sites. Instead, it will investigate the urban pricing



concept through modelling and discussions with key authorities. A stated preference survey will be conducted at the end of the project.

Pricing scenarios will be tested by using the MTCP transport modelling tool applied in the earlier PRESS project which ended in spring 2000. The network description has been updated to correspond to the present road and public transport network

Expected impacts and indicators have also been defined to be used in the local evaluation. These are based mainly on issues which can be calculated from the model; no traffic surveys are being carried out.

The authority and stakeholder group consultation process was started in May 2001, with the organisation of a seminar for a selected group of "key players", and continues. In August 2001 a "professional" article will be published in a traffic engineering journal and efforts are being made to get a more general article published in the main national newspaper in the near future.

Senate's Square in Helsinki.

Trondheim

Work in Trondheim over the last few months has focused on further detailing of the pricing trials. This design work is part of a technical process involving several local partners, which in different ways will be affected by the trials. The work also has to interact with the local political system, and must take into account that there are diverging views about how the future of urban transport pricing in Trondheim should be.

Work has also been done on refinements of conceptual solutions for the technical integration of pricing for road use, public transport

use and parking, involving banks, transport suppliers and equipment suppliers.

Further, a large travel survey was completed during April, May and June, involving a statistical sample of 6000 respondents.



EURoPRICE 2 - The Next Phase

EURoPrice 2, the second phase of the EURoPrice project (www.europrice-network.org) which involves city politicians and key policy makers considering the introduction of congestion charging measures in their cities, has begun. EURoPrice, which concluded at the end of 2000 after a final conference in Edinburgh, produced 3 technical papers which addressed the development of schemes, the issues faced by the cities in

introducing such controversial measures and the role of key stakeholders. The new phase of the project runs until the end of 2002. Bristol City Council, the Project Co-ordinator is keen to reach out to new cities with an interest in this area. The new project incorporates cities in the UK, Italy, Netherlands, France and Denmark and provides an opportunity for cities and their politicians to meet and discuss key issues and share experiences.

The project aims to meet 6 times in the next 18 months. After each session, the cities will produce a guidance paper on selected topics of key interest to partner city politicians and policy makers. Current ideas for topic papers include: Developing Political Support, Community Support (social issues & equity), Business Support, Developing Policy Frameworks, Marketing Strategies and Technical & Operational issues.

Towards the end of the project a conference will be organised to disseminate the results, however newsletters and a website will provide further details of the project through its lifetime.

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Urban Transport Pricing – Intelligent Solutions

Intelligent Transport Systems (ITS) applications in urban transport pricing are concerned with monitoring vehicle usage and charging for network access. Five technologies are regularly used in (electronic) pricing and tolling: dedicated short range communications, smart cards, transponders, antennas and licence plate recognition.

Electronic revenue collection has a positive impact on both the financial performance of the toll facilities and on traffic flow. Standards have been slow to develop due to competitive pressure, but are advancing. Advanced technologies, such as smart cards for use across applications, are being increasingly adopted. Table 1 illustrates the present levels of deployment of road pricing and tolling technology in America and, in some cases, elsewhere.

Table 1: Electronic toll collection summary table

Technology	Deployment level	Limiting factors	Comments
Dedicated short-range communications	Widespread deployment	Need for standard technologies	Successful
Smart cards	Limited deployment	Commercial and use acceptance; need for standard	Successful, examples in Hong Kong and Singapore
Transponders	Widespread deployment	Privacy	Successful
Antennas	Widespread deployment	Technical performance	Successful
License plate recognition	Limited deployment*	Technical performance	-*

* No evaluation is made for the American situation but in Singapore this system is working well see www.itsinternational.com/mag/price.htm
Source: US Department of Transportation.

It seems that the most important ITS urban transport pricing products are ready for a wider market. The market is currently relatively small and seems to be waiting for the big boom. An indication of this is the very limited number of innovative ITS and road pricing products on show at the two most recent ITS Congress events (Bilbao, June 2001 and Turin, November 2000).

Nevertheless, it is a market which is estimated to grow very rapidly over the next few years. The Ministry of Posts and Telecommunications in Japan predicts that in 2015 the market for ITS, such as car navigation systems and urban transport pricing schemes, will be worth some 7.36 trillion yen.

The 8th World Congress on Intelligent Transport Systems will take place from 30th September to 4th October in Sydney, Australia.

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