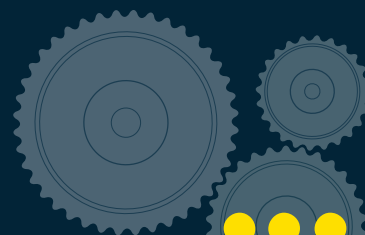




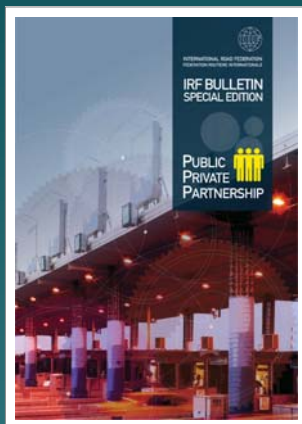
INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE

IRF BULLETIN SPECIAL EDITION



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MEETING WORLD EXPECTATIONS FOR BETTER ROADS

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According to Wikipedia, a *buzzword* is "an idiom, often a neologism, commonly used in managerial, technical, administrative, and sometimes political environments. Though apparently ubiquitous in these environments, the words often have unclear meanings".

"PPP" - for "Public-Private Partnerships" - clearly has become a buzzword that perfectly fits the above definition. And it has become a bonanza for conference organizers. Nevertheless, after an internal discussion, the International Road Federation decided to jump on the bandwagon, and to launch its own PPP Working Group.

IRF members felt, indeed, that there was a need :

- To use the diversity of IRF membership to convey more specifically the views of the "private" component of PPPs
- To improve knowledge of Road PPPs and possibly *clarify the meaning* of the concept, both for the road authorities who contemplate embarking on PPP contractual schemes, and for the general public at large
- To analyze what make road PPPs special, in comparison to PPPs related to other infrastructure sectors
- Finally, to remain true to a fundamental IRF objective - of being a clearing house where information, case studies, and contacts are all available.

I am proud to have been appointed as Chairman of this Working Group and to present the readers of our Bulletin with a series of articles that I am sure will help us meet IRF's wider objectives.

Michel Démarre

Senior International Adviser, Colas S.A.

Member of IRF Geneva PC Executive Committee

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P08. Managing PPPs

Government ministers, "traditional" civil servants, financiers, civil engineers and lawyers are all part of today's large infrastructure project. They are joined by practitioners of a newer profession - project management itself. Experience with a major Eastern European scheme points out the way it can all be put together.

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There is no unique formula for building roads. And there is no unique formula for financing them through the application of PPPs, even if certain principles should be followed. Four IRF members give the benefit of their experience - in both Asia and Europe.

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Roads are long-term projects. Long-term road contracts allow the contractor to plan and programme the work in a better fashion. Other advantages include reduced paperwork and administration. PPPs are at the heart of the long-term approach.

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For road infrastructure to play its essential role in supporting social and economic development, adequate and stable financing are pre-conditions. IRF sets out the key principles - including the role of PPPs.

INTRODUCTION

INTRODUCTION

The procedures used to procure PPP schemes are complex. Too many road agencies are introducing them without adequate preparation. How do you avoid the obvious pitfalls?

Making PPPs Work for You

Ian G. Heggie
IRF Counsellor

PPPs can be an effective way of harnessing private sector resources to maintain and improve the road network. They can raise revenues, improve quality of design and implementation, encourage innovation and - a very important feature for developing and transition countries - provide access to private sector management skills. In return, the road agency pays a regular fee - that is, a lease payment - which is usually less than it would cost them to do the work themselves.

However, the procedures used to procure PPP schemes are complex and too many road agencies are introducing them without adequate preparation. PPPs require high network planning standards. One has to ask whether the scheme is bankable and suited to the PPP approach, if comprehensive bidding documents exist, if there is competitive tendering and effective long-term supervision. In many cases, these features are overlooked and the resulting PPP goes horribly wrong.

How do you avoid the obvious pitfalls? There are two key features that underpin successful PPPs. First, make sure that you have sufficient qualified staff, supported by top quality advisers. These are expensive, but they are necessary, to prepare the project, manage the bidding process and negotiate the final contract. Try to avoid using different advisers for each project. Usually, it is better to retain one firm of advisers, so that they are always on call to sort out issues before they become problems. The advisers should be recruited on a competitive basis and the contract should be re-bid every 3-5 years. Second, you need to have an adequate team to supervise the ongoing PPP contracts. In the UK, when a new PPP scheme is signed, the road authority appoints two technical staff and one PA to supervise the project and provides them with a small budget to buy-in any required accounting and legal services.

Few countries allocate sufficient resources for the above tasks and, as a result, they often end up with problematical PPP schemes. For example, a recent review of the PPP Unit in a country that had already run into difficulties noted:

- Most of the staff responsible for terms of reference, requests for proposals are young - average age 27 - with little experience.
- Salaries for specialist staff are far too low.
- There is a high turnover of management personnel.
- Project preparation standards are too low and so are the evaluation criteria used for the award of contracts.
- The Unit urgently needs more staff, better staff training, a sound legal framework and better coordination.

No wonder so many PPP schemes end up with problems. The key message is that the public sector is often at a disadvantage when dealing with PPP schemes. It is unfamiliar territory for public servants and the road agency has to recognise this. The private sector is not there to do you a favour - it is there to make money. There is nothing wrong with this, as long as the new incentives built into the PPP schemes are clearly recognised. Otherwise, things may go wrong and - given the length of the average PPP scheme - it means you will have to live with these mistakes for a very long time.



THE LENDER'S PERSPECTIVE

For public infrastructure schemes, project design and procurement are crucial to attract the private sector. Public sector contributions, transparent procurement processes, consistent policies and solid feasibility studies should all feature on the road-builder's agenda. Here, the World Bank and the European Bank for Reconstruction & Development (EBRD) cite their experiences and give their views.

Promoting PPP Investments in Central and Eastern Europe (CEE)

Michel Audigé, Vickram Cuttaree and Elizabeth Wang
World Bank

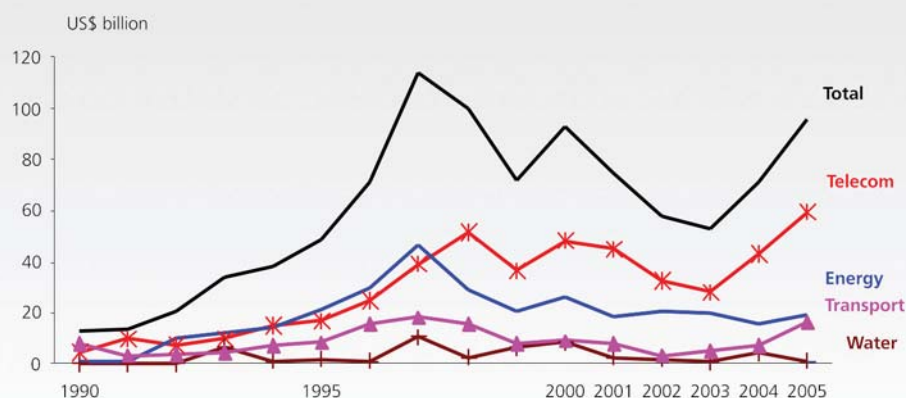
Sound infrastructure allows countries to participate in the global economy by increasing their competitiveness, which in turn, creates jobs and economic growth. In an increasing number of our client countries, national budget restrictions are leading governments to mobilize private financing to speed up the development of their infrastructure in sectors such as energy, transport, communication, and water. Public-private partnership (PPP) can be broadly defined as a partnership between the

public sector and the private sector to deliver a project or a service traditionally provided only by the public sector. Although more complex and costly to implement¹, the PPP approach is well adapted to infrastructure investments in which a fair return on investment can be expected for the private sector combined with a maximum "value-for-money" for the public sector.

In the CEE, most transport PPP investment was in roads and led by a few early-adopters. PPP in Europe and Central Asia has been driven by a few CEE countries. Hungary, Poland, and Czech Republic represented 96 percent of total private investment in transport during the last five years². Initially most of these projects were in the road sector, but projects in the last seven years have diversified to include airports, railways, and seaports.

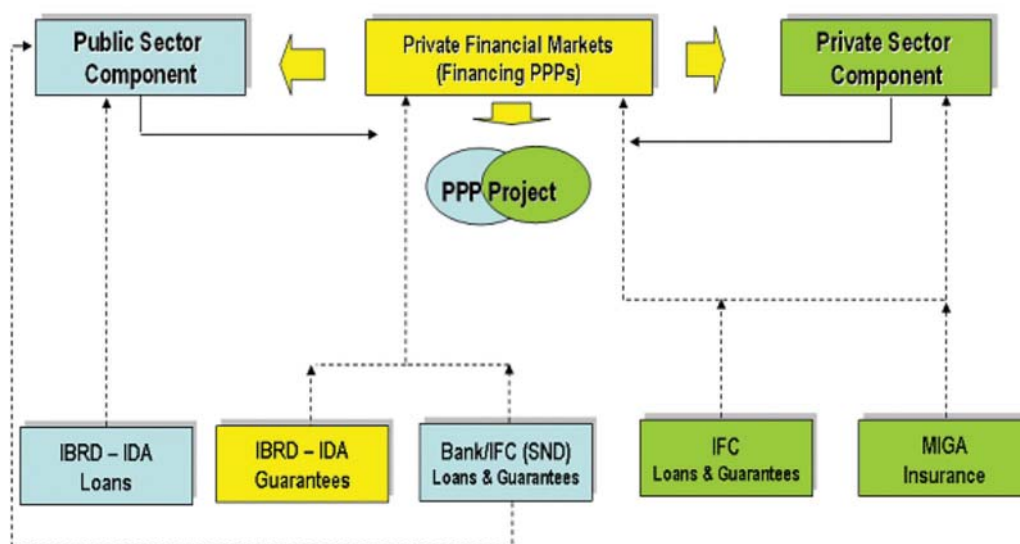
However, PPP failures in the CEE are not only a phenomenon of the early years; recently several road sector projects failed to reach financial close. Three

Investment commitments in infrastructure projects with private participation in transition & developing countries by sector, 1990-2005



Source: The World Bank and PPIAF, PPI Project database.

THE LENDER'S PERSPECTIVE



projects were cancelled (two in Hungary and one in Estonia) representing a total investment of US\$ 773.6 million. In Hungary, the Ferihegy Airport Terminal 2 expansion was cancelled in 1997 and the M1/M15 Toll Road was cancelled in 1999; in Estonia, the railway divestiture reached financial close in 2001 but was cancelled in 2006.

A review of successes and failures in the region³ reveals that PPP project design and procurement are crucial to attract the private sector. Projects that failed to attract private participation often lacked public sector contributions, transparent procurement processes, consistent policies, and solid feasibility studies. Several road projects fell into financial distress due to overly fees, and lack of government financial contribution. In a few instances, a newly elected government re-opened negotiations due to a lack of project procurement transparency under the former government. These unfortunate events could have been avoided by undertaking stronger feasibility studies (including financial analysis and more conservative traffic forecasts), and through implementing fair and transparent competitive bidding processes.

The overall quality of the PPP framework is key to attractive and sustainable PPP projects. Good concession or PPP law provides clarity and comfort for the private investor because it demonstrates government political commitment. Recently, a notable trend is the increasing use of availability payments, which increases government contingent liabilities, potentially eroding future investment capacity. Several CEE countries are significantly strengthening their public sector capacity and the overall PPP framework.

In addition to its traditional financial support to public investment projects, the World Bank provides two distinct categories of advisory services to client countries to strengthen their capacity in PPP. Under **General Advisory Services to Governments**, the Bank advises national and sub-national governments on building capacity, assessing the attractiveness of a pipeline of projects, and improving the overall PPP framework. Examples include: (i) in Saint Petersburg, advice to develop a mechanism for establishing a PPP unit; (ii) in Turkey, the review, strengthening, and harmonization of policy, institutional, and legal framework for next generation of PPP projects; and (iii) in Ukraine, the support to realize Euro 2012⁴ projects via PPP.

Under **Specific Advisory Services to Governments**, the Bank has advised governments on specific transactions and contributed to capacity-building through concrete transactions. Examples of such advisory services include (i): the feasibility assessment of the FEREX project in Hungary; (ii) the advisory services for the Western High Speed Diameter PPP project⁵ in Saint Petersburg; and (iii) technical support to the Latvian government in the competitive selection of its first motorway concessionaire through a PPP transaction.

The guiding principle for World Bank involvement is to build and strengthen the client countries' capacity to efficiently manage PPP transactions. New products currently under consideration within the World Bank Group to support further PPP transactions include a new financial instrument using local currency loans to



mitigate foreign exchange risks attached to most PPP projects. The second product is related to so-called wholesale guarantees that make use of local guarantee funds to cover the government's contractual risks in PPPs, i.e., Partial Risk Guarantee⁶ instruments. A third product being considered for the poorest countries is a Partial Credit Guarantee, which could mitigate the perceptions of high risk for the private investors in these countries.

1) Granting and Renegotiating Infrastructure Concessions: Doing it Right (Luis Guash 2004)

2) <http://ppi.worldbank.org/>

3) A study on recent experience in PPP in the transport sector is under preparation jointly by the World Bank and PPIAF, with input from Dr Andras Timar.

4) Euro 2012 refers to the European Football Cup, which will take place in Ukraine and Poland in 2012.

5) <http://www.whsd.ru>

6) IDA countries are defined (Fiscal year 2008) as countries where the GNI per capita is less than US\$1,065.

The EBRD experience with Infrastructure PPPs

José Carbajo

Director, Strategy and Policy Development,
Infrastructure Business Group, EBRD

Much financing and expertise is needed to upgrade the transport and municipal infrastructure networks in Central and Eastern Europe and the former Soviet Union. The current networks were designed and built decades ago and are insufficient to support the needs of a modern market economy. Due to a lack of implementation know-

how and limited financial resources, governments in the region are looking into public-private partnerships (PPPs) to fulfil their infrastructure plans.

The European Bank for Reconstruction and Development (EBRD) has a rich experience in financing transport and municipal infrastructure PPP projects, working with central or local governments and the private sector. To date, the EBRD has invested €1.2 billion supporting 23 PPP transactions with a total project cost of €4 billion spread across several countries and market segments - see table.

The Record

The success record of the Bank with transport PPPs is mixed in the road sector, weak in the ports sector and promising in the airports sector. Meanwhile, most municipal infrastructure PPP projects have been completed on time and within budget and are performing well (the water concession in the City of Sofia being the exception).

The independent Evaluation Department of the EBRD recently viewed 14 infrastructure projects, which included a PPP component and found out that the Bank met major challenges during the preparation and implementation phases of these projects.

These challenges included the identification of proper financial incentives to attract and maintain a private sector contribution to services when revenues are limited by a price cap; the lack of legal protection of the private sector to enforce contracts in weak legal and regulatory frameworks; and the lack of continuity in the commitment of public administration and government counterparts towards PPPs.

	Period	PPP Transactions	Sub-Sectors	EBRD Finance (€ million)	Total Project Cost (€ million)
Municipal & environmental infrastructure	1996 -2006	11	water wastewater urban transport district heating solid waste	658	1,385
Transport	1993 - 2006	12	motorways railway stations ports airports	564	2,578

EBRD's PPP Portfolio

THE LENDER'S PERSPECTIVE

The EBRD PPP financings to date have not translated into a stable stream of PPP projects in the Bank's countries of operation due to several factors: the lack of a cross-party political consensus on the need for PPPs, government changes following elections, the loss of key personnel, and the lack of negotiating experience and PPP skills in the public sector. These areas remain sources of project risk.

The Future

It is difficult to identify a precise PPP trend in transition countries, although there is a strong willingness to implement pilot PPP projects in many of them, including new EU member states, such as Bulgaria and Romania, and oil-rich countries with ambitious investment plans, such as Russia and Kazakhstan. Recent developments in the EU8 member states convey mixed signals, with pilot PPPs in several infrastructure sectors but with unrealistic timetables or underdeveloped legal frameworks.

The future PPP market in central and eastern Europe and the former Soviet Union depends in part on the way and the speed with which some outstanding challenges are addressed. These challenges include the blending of EU

grants in PPP financing packages, the existence of "negotiated" concessions (long-dated lease contracts agreed without a competitive process) in the Russian municipal infrastructure market, and the development of PPP projects in social sectors such as housing, hospitals or prisons.

Conclusions

The EBRD is committed to the development of a sustainable infrastructure PPP market in its countries of operations. It can provide a wide range of financial products for use in PPP transactions including loans, equity, guarantees and Treasury products.

The motivation to support PPPs in the EBRD region, however, goes well beyond a commercial rationale. The potential impact of PPPs on the process of transition to market is large. The selection method for the private operator, for example, can set standards and promote competition for the market; while the transfer of risk from the public to the private sector can have demonstration effects by providing incentives for risk and profit sharing.

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MANAGING PPP PROJECTS

Government ministers, "traditional" civil servants, financiers, civil engineers and lawyers are all part of today's large infrastructure project. They are joined by practitioners of a newer profession - project management itself. Experience with a major Eastern European scheme points out the way it can all be put together.

M6 Phase III - A Project Management Case

Erik Aal

Project Manager M6, Ministry of Economy and Transport, Hungary

On November 21st 2007 the Hungarian Minister of Economy and Transport and representatives of Colas, Strabag, Bouygues, John Laing Infrastructure and Intertoll-Europe signed the contracts for the M6 Phase III PPP motorway project. On the same day the financial close of the project was arranged with participation of CIB Bank, Bank of Scotland, Fortis and HSBC.

M6 Phase III is a DBFO deal with a NPV of approximately 1,06 bln EURO and a concession period of 30 years. The invitation for participation was published in OJEU on 11th of April 2007. Taking the formation of the project team as a starting point of the process, beginning in March, it took somewhat less than 9 months to complete the project. In fact, M6 Phase III counts as the fastest motorway PPP project - to which should be added, in terms of achievement, that it is the first large high-profile contract negotiated in Hungarian, it is the first PPP project that had to comply with the very rigid Law on Public Procurement, and it is the first Hungarian motorway project with tunnels - 4 in total. I want to address some of the key project management features of the project that contributed to its success.

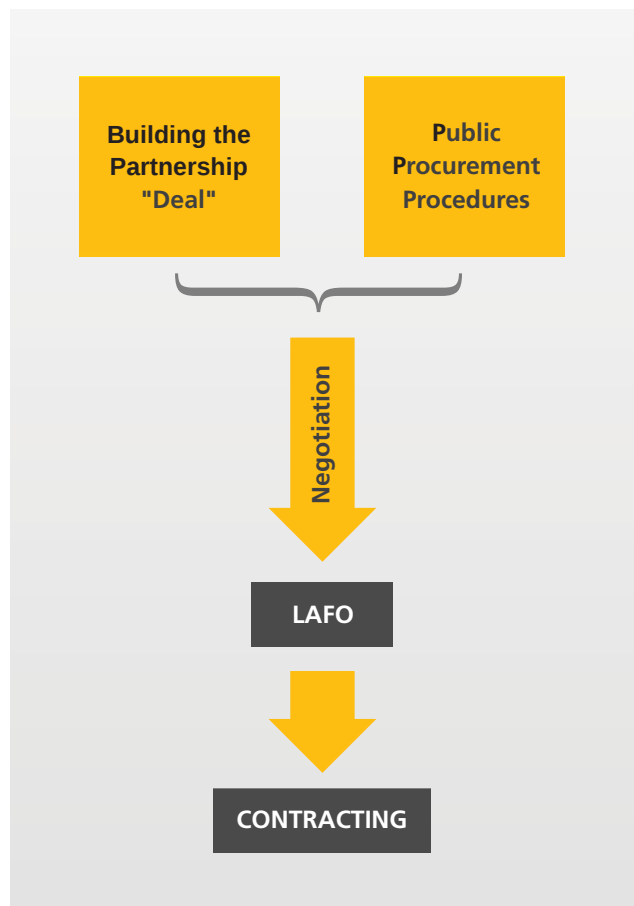
The project team functioned as a temporary matrix organisation. External parties were involved: an external project manager, legal advisors and financial advisors. The team was completed by experts from the National Infrastructure Development Agency, under the Ministry of Economy and Transport (MET) and co-workers from the relevant departments of MET. Given the tight schedule, the project team received a wide mandate, so it operated quite independently from the Ministry with a strong "project-push" approach, as typical for a product-driven matrix. Simultaneously there was a very strong link to the MET through the project director and the steering committee. All issues bordering or going beyond the mandate of the team were addressed in the monthly steering committee meetings.

The steering committee consisted of the relevant State Secretary, Director-General, the MD of the National Infrastructure Development Agency, a Minister's council, the three key members of the project team and the project manager. It worked very well to have the key advisors on the SC as the issues to be discussed were often quite complex and required a lot of professional expertise to be put on the table. Working this way gave the Ministry insight in how the team was working and this built a lot of trust, which enabled continuous independence at the same time.

In the early stages of the project we paid a lot of attention to what I termed the "quasi dialogue". As the Public Procurement Law prohibits any direct contact with the participants in the process up to the moment of the



MANAGING PPP PROJECTS



start of the negotiations, the public procurement process stands apart from the deal-making process, which is at the end of the day the essence of a PPP project - see figure. We overcame this limitation through the "quasi dialogue", which was in fact a process to evaluate our proposals and ideas from the perspective of the private sector

We did this through extensive review of previous Hungarian PPP projects and a lot of open discussion inside the team aimed at reaching a consensus position. This process certainly contributed to achieving very clear objectives and created a strong bond inside the team from which we took benefit later on, when very difficult decisions had to be taken inside the team with a lot of conflicting views and interest on the table. In retrospect it is quite clear that we were successful, where we were able to set clear goals in the beginning of the project and we encountered trouble in areas where goals had not or only partially been settled.

A key element was management of the time frame. Time focus is often a weaker point of a state administration and therefore we locked in the milestones to the highest extent possible. This proved essential to achieving them.

"Selling the project" inside the wider state administration, by stressing the results and the positive aspects of the project work, was quite important throughout the process, as the project had an unconventional approach and was watched with Argus eyes.

At the end of the day the fact that we had a real team made our achievement possible. When somebody dropped out another one took over, everybody accepted extra work when it was required, our plenary meetings were not formal events but were about our joint venture and everybody was eager to make a real synthesis, through contributions from the various areas of expertise.





EXPERIENCE ON THE GROUND

There is no unique formula for building roads. And there is no unique formula for financing them through the application of PPPs, even if certain principles should be followed. Four IRF members give the benefit of their experience - in both Asia and Europe.

India's Stride Towards PPPs in Road Projects

Dr. P. K. Sikdar & Ms. Niyati Tandon

Intercontinental Consultants & Technocrats,
New Delhi

Economic boom in India has driven the development of quality infrastructure at a fast pace, and roads are seen as the most fundamental among all such requirements. Huge investment is required for upgrading the road system and it is unlikely that it can be met from governmental resources alone. Thus, it can be done only by attracting private capital; and this has also been adopted as a key strategy in a large number of countries worldwide. PPPs offer a number of advantages in terms of enhancing the ability to take up larger projects and a greater number of desirable projects with innovative designs and implementation plans of private entrepreneurs with specialized expertise and cost-reducing technologies. Moreover, private parties can provide extra efficiency in operations and maintenance; however, a higher level of coordination among all stakeholders is a prerequisite for the success of PPPs.

India had taken up the National Highway Development Project (NHDP) to provide a high-speed network of about 20,000 kilometers in just one decade. After the first few years of the implementation programme, the National Highways Authority of India (NHAI) has shifted its emphasis to the PPP mode for subsequent phases of NHDP. This can be considered as one of the far-sighted decisions of the government, as not all of these can be funded, nor can they be maintained, from taxes. However, not everyone at the policy-making level fully understands that private sector participation in infrastructure development, especially in the road sector, is a very complex matter. It requires a very transparent policy framework, enabling the investor to secure a reasonable return. PPP infrastructure projects, in the case of roads, typically involve transfer of public assets, delegation of governmental authority for recovery of user

charges, private operational control and provision of services, and sharing of risks and contingent liabilities.

The effort of the government to standardize the concession agreement for all such projects through a Model Concession Agreement (MCA) is laudable, but inhibitive to development of PPP opportunities. This is because there are other business models possible for attracting private resources. No doubt, the MCA clearly provides for concessions and exemptions for local traffic, but it has not addressed the key concern of alternative routes, which is absent in many cases as the corridors taken under PPP are existing National Highways.

The concession period is a function of the total capital cost of the project, which is dependent on the extent of the facility and the level of proposed service to be provided. These are also governed by the expected traffic volume and the user fee. The government for some reason has prescribed the user fee - the toll rate - uniformly across the country. With standard designs of highways, the viability becomes a strict function of traffic volume. But in any case, uniform toll rates for all 2, 4 and 6 lane highways cannot be justified. As an escape for non-viable corridors, MCA even recommends phased development. But, with the tortuous laws of land acquisitions in the States, the right of way for ultimate development is acquisition in the first instance, which could not be done even for the earlier phases of NHDP.

While the business model adopted has a modern format of output specifications, the concession fee and its adjustment, risk allocation mechanism, indexation of user fee, etc have all remained old-fashioned and traditional in their objectives. It is well understood by all stakeholders of PPP that the concession period should be a dynamic function of traffic, to be measured every five years in order to provide more reliable estimates.

The contributions of the concessionaires in PPP projects, in terms of building national assets, must be recognized and accepted with open arms. The tactics of governments to attempt PPPs using half/semi-transparent policies have failed worldwide. Entrepreneurs must be treated as equals and duly garlanded for their contributions to nation building.

EXPERIENCE ON THE GROUND

Finland - E18 Muurla - Lohja PPP Project

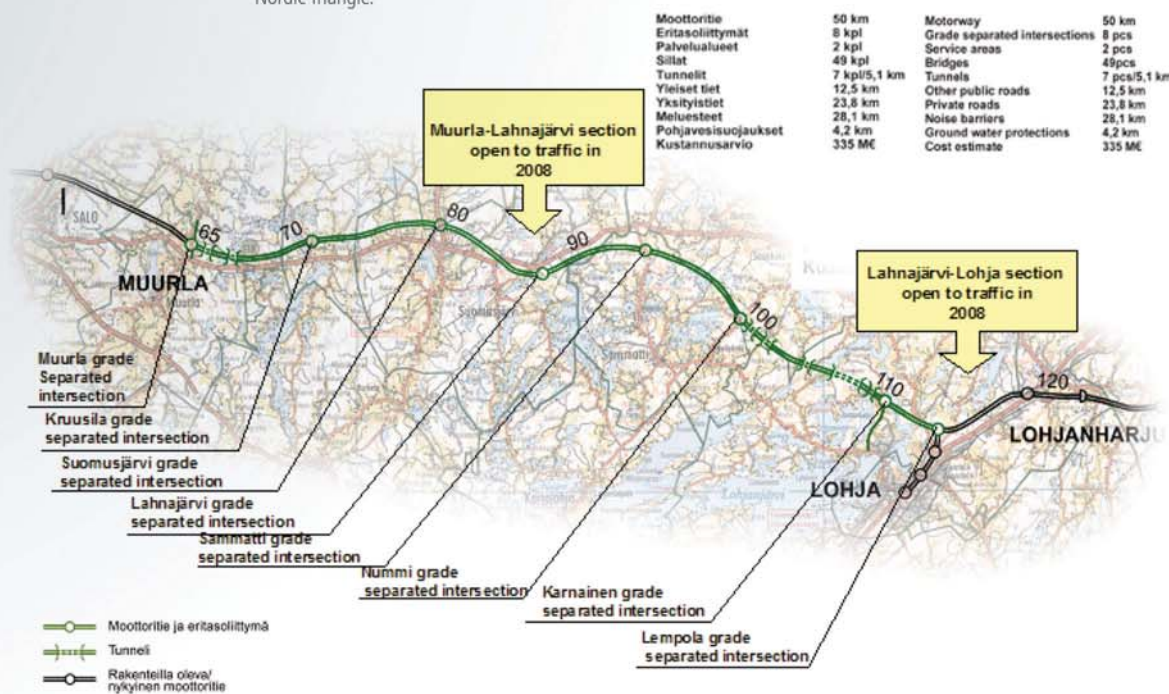
Matti Vehviläinen

Project Director, Finnish Road Administration

Project Purpose and Project Definition

The European Road E18 in Finland connects the ports of Turku and Naantali via the Helsinki metropolitan area to the Vaalimaa border crossing to Russia. The E18 is a central element of the Nordic Triangle, which links the Nordic capitals to each other, and with Russia and central Europe. It is one of a series of EU prioritised transport schemes. The section Muurla - Lohja completes the missing link of the motorway between Helsinki and Turku and ensures the development of the growth centres in the whole of southwest Finland. The living comfort and the image of population centres along the existing roads will be improved, as well as road quality, which is not in line with current traffic requirements and cannot ensure future development. Transport reliability does not meet business or international transport requirements. Furthermore traffic safety will improve. Within ten years about 250 personal injury accidents with some 50 fatalities will be avoided.

Finra (Finnish National Road Administration) started in March 2004 a procurement procedure for converting the Muurla - Lohja section into a motorway, and for its maintenance, with one service agreement. The procurement procedure follows the life-cycle model, which is a Finnish application of the Public Private Partnership model (PPP) commonly used internationally. The agreement period is 24 years - that is, from autumn 2005 to autumn 2029.



The scope of the project - E18 Muurla-Lohja motorway



The order authorisation for the project is EUR 700 million, voted by the Finnish parliament. The contract was signed on 27 October 2005 with nominal value of 638 million euros, of which the construction accounts for 300 million. Payments to the contractor will begin at the time the road or a part thereof is opened for traffic. According to the contract that should be in November 2008.

Technical content

The E18 Muurla-Lohja project involves 51 km of new motorway, 7 motorway tunnels totalling 5.1 km in length, 8 interchanges and 75 bridges. The upkeep and maintenance services for the roads cover the motorway, its ramps, tunnels, bridges and other structures and equipment for a period of 21 years. The scope of the project is shown on the map on page 11.

The bidding process

A procurement announcement for the project was submitted on 6 March 2004, supplemented by separate instructions for the prequalification candidates. In submitting the project to bidding, a consultation procedure that begins with a prequalification phase was used. During the prequalification phase the client was to select no more than five service providers from the

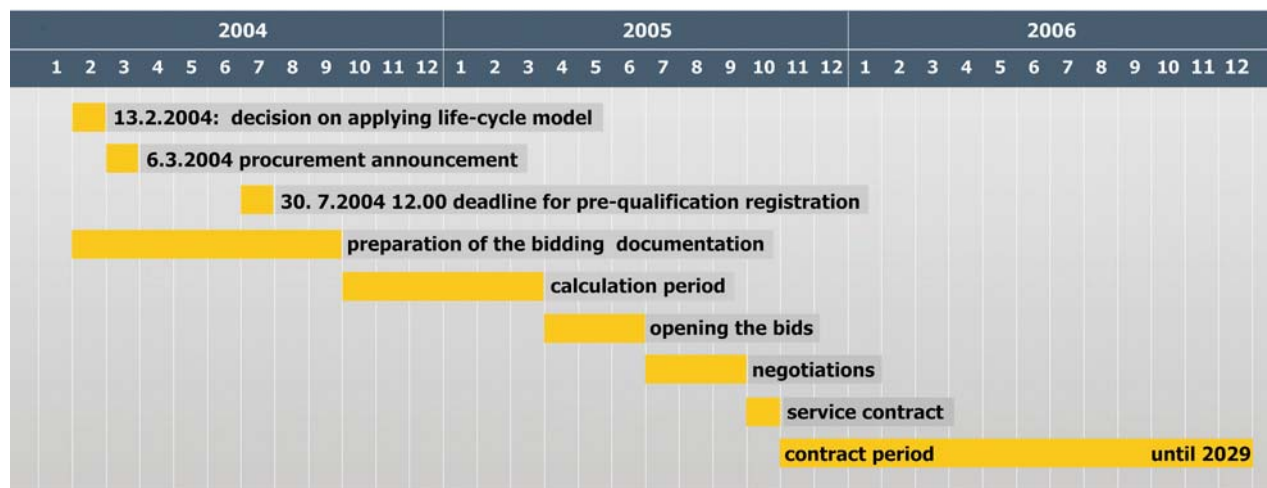
Administration received three extensive tenders on the last day of March 2005. These were reviewed quickly and by May it had already become clear that the consortium Tieyhtiö Ykköstie had submitted the best one. The service contract and its terms were finalised in negotiations conducted during summer and autumn 2005.

Actors involved in the service contract

The client in the project is the Finnish Road Administration, which is represented by the organisation "The E18 Muurla-Lohjanharju Project"

The **service provider** is Tieyhtiö Ykköstie Oy, a company established for this project. The **owners** of Tieyhtiö are Laing Roads Ltd, Skanska ID AB and Lemminkäinen Oy. The **financers** of Tieyhtiö are the European Investment Bank (EIB, 50 % of senior debt), the Nordic Investment Bank (NIB 25 %), Nordea Bank, Handelsbanken and Royal Bank of Scotland (all three together 25 %). Funding is based on bank loans.

The **builder** is the consortium Työyhteenliittymä E18 (Work Consortium E18), which comprises Skanska Tekra Oy and Lemcon Oy. Tieyhtiö has concluded a DB contract on planning and construction with the consortium.



Schedule for the bidding process

candidates. The project was marketed to potential tenderers domestically and internationally in spring 2004. This proved to be a very fruitful effort, as invitation-to-tender documents could be sent in to five tenderer consortia.

Calculation of the tenders involved interactive negotiations with the tenderers, during which improvements were made to the Finnish lifecycle model based on the tenderers' comments. The Finnish Road

The planner is the consultancy group Elinkaarikonsultit formed by Ramboll Finland Oy, SITO Oy, JP-Transplan Oy and JP-Suoraplan Oy.

The subcontractors and material suppliers operate under a contractual relationship with the consortium.

EXPERIENCE ON THE GROUND

Greece - the Attica Tollway, a Typical Hybrid PPP Project

Bill Halkias

Managing Director, Attica Tollway Operations Authority - Greece

When PPPs are combined with EU funding they are termed "hybrid." The impact of such funding is to reduce both the public and private sector's funding requirement and to increase the bankability of the project.

Attica Tollway is a hybrid BOT project. The project involved the design, construction and operation of a 65 km. Tollway. It fulfilled a need identified 40 years ago, but also incorporated an extension to the new Athens international airport, reduced traffic in central Athens and formed the backbone of the transport network during the 2004 Olympic Games.

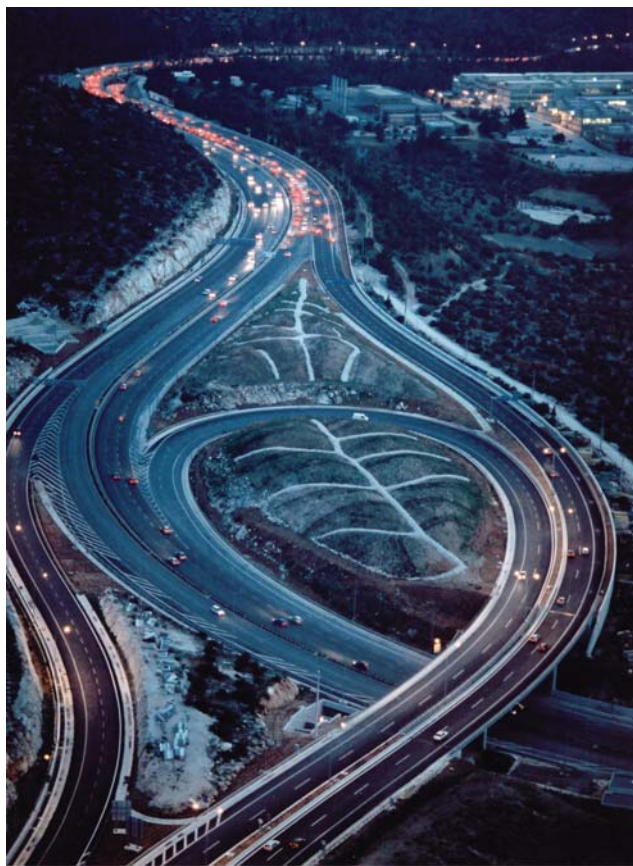
Hybridisation was essential to its success. A PPP structure used EU structural funds alongside the state's financial contribution. The total value of the concession contract

was Eur 1,249 million, with about one third covered by the Greek state - partly through EU structural funds. Contractors' equity provided 14% and the remainder was covered by loans. The debt finance was structured by the European Investment Bank (EIB), to cover 45% of project cost; commercial banks funded the remaining 7%. During construction the EIB loans were guaranteed by the commercial banks. During operations the guarantee is provided by the Greek state.

Thus - most construction risks were carried by the private sector. And the private sector obtains an adequate rate of return on its investment through toll collection, and repays the loans.

The project had to overcome significant difficulties, mainly caused by delays - through design changes ordered by the state for environmental reasons. The public sector had to provide funds to the sponsors to begin construction before the financial close. And the original concession contract did not include a delay mechanism. Extensive negotiations between all parties resulted in satisfactory solutions and construction was completed on time and within budget.

The success of the project has exceeded expectations. The 2007 daily traffic volume of 300,000 vehicles is higher than the original prediction for 2021. An enormous residential and business development has taken place in all the surrounding regions. The experience gained will form the basis for planning subsequent successful PPP projects.



The M6 Motorway in Hungary - Landmark PPP Project in Eastern Europe

Porr Solutions GmbH - Austria

The growing economies of the CEE and SEE States, and especially Hungary as one of the most dynamic and geographically central countries, require enormous infrastructure upgrades - especially transport infrastructure.

One part of the very ambitious motorway building programme of Hungary is the construction of the Motorway 6 between Budapest and Pecs, in the south. The motorway is divided into four stretches; three of



them are executed as Public Private Partnerships. The first section of the new M6 runs about 60km from Érd in the south-western catchment area of Budapest, parallel to the Danube River, south to the city of Dunaújváros, to the junction of the future motorway M8, which intersects the route of the M6 in a west-east direction. In addition to the motorway, a motorway operation and traffic management centre was built, centrally located, from which the motorway is monitored, maintained and controlled.

The implementation and realization of the M6 motorway is a **record-breaking story of how fast** PPP projects can be realized if all partners work together efficiently and effectively.

- The call for tender was published in late February 2004 with an indicative offer to submit until the 3rd of May 2004 and 3 tenderers were selected by the Hungarian government.
- They were invited to submit a Final offer until 19th of July 2004, and the preferred bidder was selected on the 30th of July.
- It took only 2 months till the 2nd of October to finalize negotiations on the Concession Agreement and a further 2 months till the 16th of December to reach financial close.

The successful consortium and subsequent Special Purpose Vehicle was formed by **PORR Infrastruktur GmbH, Bilfinger Berger BOT GmbH and Swietelsky International Bauges.m.b.H** for the sole purpose of building, operating and maintaining the M6 Motorway.

In the light of rather low traffic volumes, the Hungarian state opted for a **pure availability fee payment** mechanism, where the private partner receives **fixed monthly payments** as defined in the financial model, independent of traffic volumes. At the same time the Hungarian state employs a severe **quality control system** and closely monitors the service level of the private investor. In case of non-availability, e.g. due to routine or heavy maintenance, or in case of bad service, e.g. bad snow-cleaning, no grass-cutting, the **state of Hungary imposes deductions and penalty payments** on the private partner.

Another important part of the payment mechanism is the **f/x risk and inflation risk mitigation** mechanism. The private investor predefined in the financial model, which costs were to be paid in Euro and which in HUF, and also



which parts were to be indexed with Euro or HUF inflation. By invoicing the HUF and the Euro component separately every month, there remains no f/x or inflation risk whatsoever within the structure. This very straightforward payment mechanism enabled the private investor to negotiate very aggressive financing terms and also to widely syndicate the deal. During construction, the project was refinanced with € 212 Mio floating notes and € 200 Mio EIB loan, both wrapped by a monoline guarantee - an **innovative and aggressive financing structure** never seen before in CEE/SEE markets.

The Construction JV, of Bilfinger Berger Vienna, PORR (Budapest) Építési Kft. and Swietelsky Építési Kft undertook the construction works, consisting of 53.4 km Motorway M6; 5.2 km Motorway M8, 9 motorway junctions, 53 bridge structures, 7 corrugated metal outlets, 2 rest areas with gas stations (per direction) and 2 rest areas (in each direction), an operation and traffic management control centre, and extensive protection measures such as green areas, animal fences and noise protection walls are also part of the Concession project.

Due to the short construction time of only 18 months the construction of the motorway was an enormous technical - but even more logistical and organizational - challenge to all parties involved. At peak periods there were more than 600 construction machines and almost 3,000 people at work along the 60-kilometre construction site.

Having strong, experienced and dedicated project teams on both the public and the private side, proved to be vital for the fast realization of the project. The robustness of the financial and contractual structure and the fair risk allocation, as proposed and negotiated between the partners, were also key factor to meet ambitious timetables. Finally, the private investors PORR, Bilfinger Berger and Swietelsky proved their ability to "do the impossible" and to meet tough deadlines by overcoming all challenges and problems on the way to finalising the project.



IN THE LONG TERM

IN THE LONG TERM

Roads are long-term projects. Long-term road contracts allow the contractor to plan and programme the work in a better fashion. Other advantages include reduced paperwork and administration. PPPs are at the heart of the long-term approach.

Public-Private Partnerships (PPPs) in Road Works: A Prosperous Marriage

Michel Démarre

Chairman of IRF PPP Working Group

Contracts

Road PPPs differ from traditional methods of contracting; typical PPP contracts are *long-term* (e.g. from 3 to 5 years or more for maintenance and up to 25 years or more for concessions). They often include *performance-based requirements*, i.e. the contractor is not paid on the basis of the quantities of materials he has supplied and/or placed, but for achieving performance goals. They are *holistic* or *global*, i.e. they deal with several components of road assets (not only pavements but also, possibly, bridge works, cleaning, signing, etc.).

Contracts tend to represent a balance between, on the one hand, complexity and transaction costs, and on the other, advantages from effective work planning and organization, optimization of lifecycle costs, (with a cost/time discipline created by the efficiency influences of private sector interests), beneficial risk management and allocation, and the advantages of competition and innovation.

Work planning and organization

Traditional procurement usually involves the application of annual budgetary procedures. Work is procured in separate packages, based on available funding (typically for large construction works); funding has to be renewed each year (typically for maintenance work) and for each type of activity (surfacing, grass cutting, road marking, etc.).

This method does not allow optimum work implementation, and therefore impacts negatively on costs, completion time and/or work quality. *Long-term contracts* allow the contractor to plan and programme the work in a better fashion. The other advantage is in

the decrease in paperwork and administrative tasks associated with numerous yearly tenders: instead of one yearly tender for each individual task (e.g. resurfacing, grass cutting, road marking, etc.), public authorities will only have one contract to manage. Admittedly, one single holistic multi-year contract may require more preparatory work. Once launched, however, it gives the road authority more time to concentrate on contract *management*.

Optimization of lifecycle costs

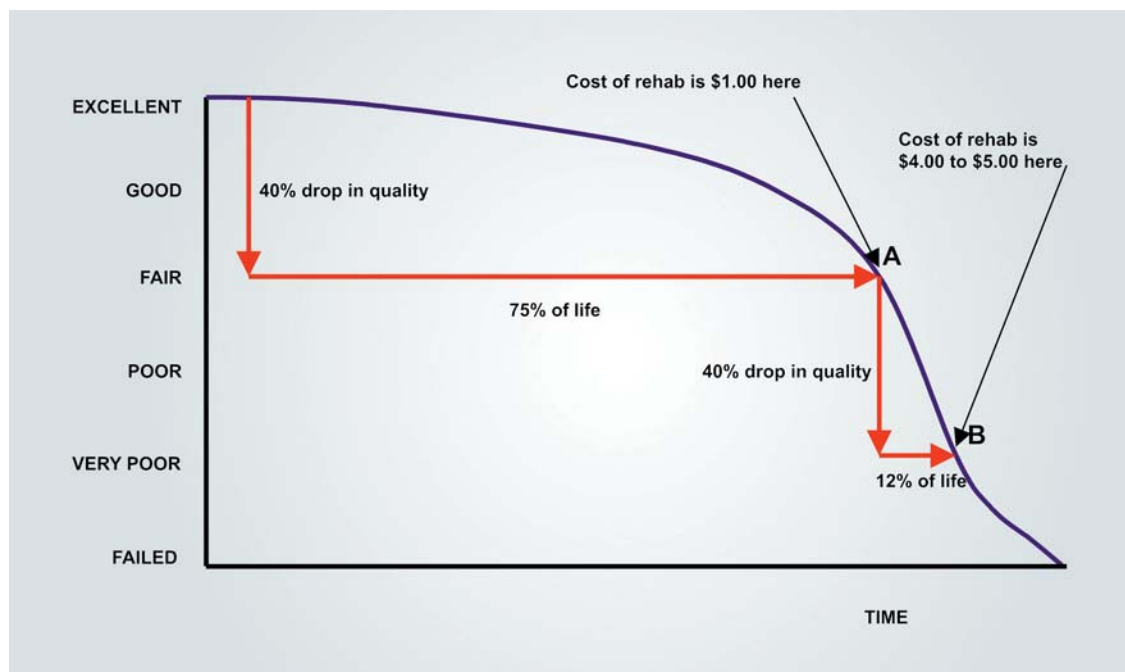
Clearly, roads deteriorate over time. In an optimized scenario, roads are not allowed to deteriorate to a point where it would be too expensive to bring them back to their planned level of service. This is illustrated in the chart, where the quality of a road is rated on the vertical axis, and time on the horizontal axis.

Classic contractual arrangements seldom lead to optimization. Typically, at the construction level, pavement structural design is based on assumptions relating to standard life expectancy, expected traffic (weight and intensity) and material fatigue resistance. Adequately planned periodic maintenance works are then supposed to take place on time, to optimize expenditure over the pavement life-cycle.

This assumes that adequate monitoring is carried out on a regular basis to check any deviation from the initial assumptions, and that any necessary corrective action is taken, to keep as close as possible to the planned optimum.

Unfortunately - things never work out that way in real life. Ideally, the first rehabilitation, if optimal, should take place at around point A of the deterioration curve (see chart). Unfortunately, lack of funding for adequate monitoring and investigation, not to mention lack of funding for rehabilitation works themselves, generally lead road authorities to wait beyond this point and then rehabilitate much later (at point B, or worse) and almost certainly at a much higher cost.

By contrast, in a well-designed PPP contract, both construction and rehabilitation-maintenance tasks are taken into account over a long period. It is then possible



for the contractor to properly assess life-cycle costs and to implement work sequences in a timely, optimal manner.

Risk management

The possibility for a road authority to transfer risks associated with road works to contractors, merely through using PPPs, is often mentioned as an advantage of PPPs. In one version of conventional wisdom, risks should be allocated to stakeholders (e.g. road authorities, banks, contractors, etc) on the basis of who is best able to manage and/or mitigate the *consequences* of those risks, should they occur. But one fact is often ignored. Before any transfer of risk in a PPP contract, a prior analysis has to be made to *identify* risk. In fact, this identification is perhaps the most valuable part of the process. The true virtue of PPPs is to help identify hidden risks and their associated costs.

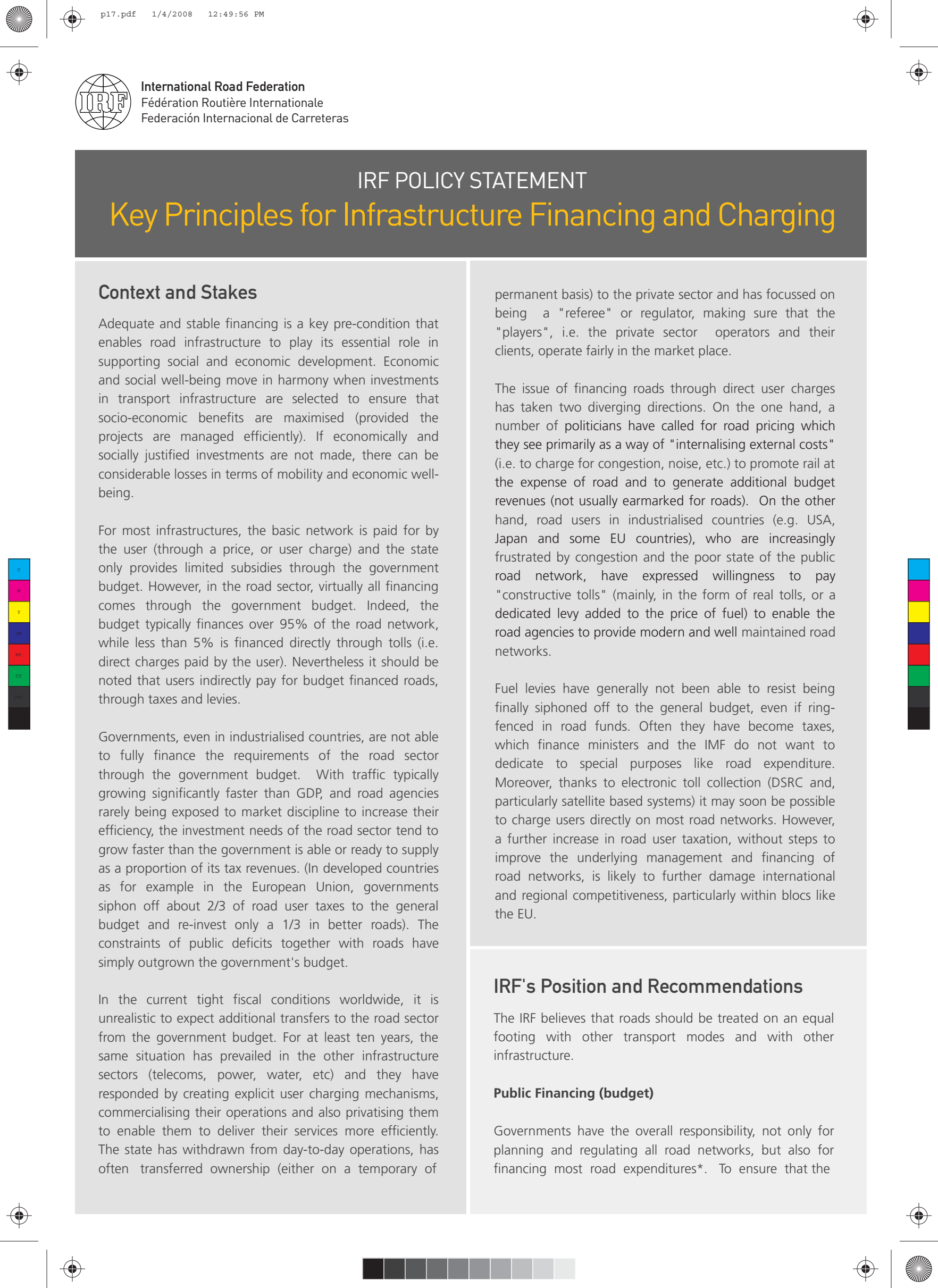
PPP contracts need to set the right balance of risks to be shared by the parties and to find the right incentives for the contractor to meet the expectations of the client. This is not easy. But, international experience shows that works performed under PPP contracts tend to meet cost predictions and deadlines better than traditional contracts.

Innovation

As we have seen, PPPs are usually long-term contracts. Such deals give contractors some scope for improving the way they do things. They provide an incentive to look for alternative solutions in meeting performance requirements, at lower cost and/or with higher efficiency.

Such deals are therefore more likely to promote true innovation - either technical or organizational. For example, equipment manufacturers develop new machinery. It not only does the job - but is also capable of quantifying and registering electronically what has been done, at which location. It is then easier to check if works comply with specifications and to monitor road conditions, according to performance parameters - which are, themselves, part of the contract.

Environmentally-friendly solutions are part of the scene. Cost-conscious contractors are given a large amount of leeway, so long as performance standards are met. It becomes increasingly clear that the least-cost solution may also be the environmental solution. So many contractors will be keen to offset rising energy costs by increasing the use of new or not so new techniques - for example, through recycling, using energy-efficient hot mixes and conducting life-cycle analysis.



IRF POLICY STATEMENT

Key Principles for Infrastructure Financing and Charging

Context and Stakes

Adequate and stable financing is a key pre-condition that enables road infrastructure to play its essential role in supporting social and economic development. Economic and social well-being move in harmony when investments in transport infrastructure are selected to ensure that socio-economic benefits are maximised (provided the projects are managed efficiently). If economically and socially justified investments are not made, there can be considerable losses in terms of mobility and economic well-being.

For most infrastructures, the basic network is paid for by the user (through a price, or user charge) and the state only provides limited subsidies through the government budget. However, in the road sector, virtually all financing comes through the government budget. Indeed, the budget typically finances over 95% of the road network, while less than 5% is financed directly through tolls (i.e. direct charges paid by the user). Nevertheless it should be noted that users indirectly pay for budget financed roads, through taxes and levies.

Governments, even in industrialised countries, are not able to fully finance the requirements of the road sector through the government budget. With traffic typically growing significantly faster than GDP, and road agencies rarely being exposed to market discipline to increase their efficiency, the investment needs of the road sector tend to grow faster than the government is able or ready to supply as a proportion of its tax revenues. (In developed countries as for example in the European Union, governments siphon off about 2/3 of road user taxes to the general budget and re-invest only a 1/3 in better roads). The constraints of public deficits together with roads have simply outgrown the government's budget.

In the current tight fiscal conditions worldwide, it is unrealistic to expect additional transfers to the road sector from the government budget. For at least ten years, the same situation has prevailed in the other infrastructure sectors (telecoms, power, water, etc) and they have responded by creating explicit user charging mechanisms, commercialising their operations and also privatising them to enable them to deliver their services more efficiently. The state has withdrawn from day-to-day operations, has often transferred ownership (either on a temporary of

permanent basis) to the private sector and has focussed on being a "referee" or regulator, making sure that the "players", i.e. the private sector operators and their clients, operate fairly in the market place.

The issue of financing roads through direct user charges has taken two diverging directions. On the one hand, a number of politicians have called for road pricing which they see primarily as a way of "internalising external costs" (i.e. to charge for congestion, noise, etc.) to promote rail at the expense of road and to generate additional budget revenues (not usually earmarked for roads). On the other hand, road users in industrialised countries (e.g. USA, Japan and some EU countries), who are increasingly frustrated by congestion and the poor state of the public road network, have expressed willingness to pay "constructive tolls" (mainly, in the form of real tolls, or a dedicated levy added to the price of fuel) to enable the road agencies to provide modern and well maintained road networks.

Fuel levies have generally not been able to resist being finally siphoned off to the general budget, even if ring-fenced in road funds. Often they have become taxes, which finance ministers and the IMF do not want to dedicate to special purposes like road expenditure. Moreover, thanks to electronic toll collection (DSRC and, particularly satellite based systems) it may soon be possible to charge users directly on most road networks. However, a further increase in road user taxation, without steps to improve the underlying management and financing of road networks, is likely to further damage international and regional competitiveness, particularly within blocs like the EU.

IRF's Position and Recommendations

The IRF believes that roads should be treated on an equal footing with other transport modes and with other infrastructure.

Public Financing (budget)

Governments have the overall responsibility, not only for planning and regulating all road networks, but also for financing most road expenditures*. To ensure that the



road network contributes to economic and social well-being, new investments should only be undertaken if they produce an acceptable social rate of return. Projects that do not meet these criteria should only be selected if they are justified by sufficient macro-economic and/or strategic benefits (viewing each road as part of a wider network).

In certain country cases, but not on a global level, 2 approaches have proved successful:

- property-based financing - community financing through local road associations, and
- indirect user-based financing (fuel levy) as a form of pricing.

Pricing - user based financing (tolls)

Tolling has to be constructive (not penalising road use) and adjusted to the specific road network of each country to ensure utmost transport effectiveness. In such cases, tolling is the ultimate user pay system - the user pays a price that he is willing and able to afford in return for a clearly defined service provided by the road agency. "Value for money" drives this arrangement and makes it publicly acceptable. In developing countries, the purchasing power of the population at lower socio-economic levels also has to be taken into consideration.

Prices (tolls) should attempt to cover all costs, including operation, maintenance and investment. When tolls do not cover all costs, government should consider making either an up-front payment, or paying an ongoing shadow toll, to make the scheme financially viable.

The IRF strongly urges that toll roads should be operated as a public good, like power, water, telecoms, etc. They should ideally be managed by the private sector, or by an enterprise (which is partly government and privately owned) that is subjected to normal market discipline (i.e. enjoys a fair measure of financial independence, keeps commercial accounts, is independently audited, etc.).

All necessary measures should be financed by the users to meet reasonable environmental, safety and other standards. The role of the public regulator is vital for insisting on the implementation of minimum acceptable standards, e.g. for road safety, noise, etc. However, the regulator should not intervene in the investment decisions when the operator can achieve savings as a result of better technical designs.

The Right Mix of Public and Private Funding

To build, maintain and manage an appropriate road network, the right mix of public and private road finance must be found taking into account private participation in operations, management and finance.

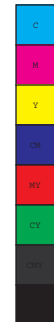
- All commercially viable highway links with sufficient traffic flow should ideally be developed as BOT (Build, Operate, Transfer) projects. In order to create investor confidence, public authorities may take shares in the concession companies.
- Projects which are socially important, but only commercially viable if subsidised by the public purse, should be realised as PPPs, refinanced by tolls, for example a concessionaire with backing from government funds.
- The secondary road network, particularly roads that will never be commercially viable, should be financed by the public sector through a dedicated road fund. These and other publicly funded projects should also be a form of PPP conferring the operation side - that is, management and execution of rehabilitation, maintenance and construction works - to the private sector.

The guiding principle for all infrastructure financing and charging must be that there should be no additional financial burden for road users, and earmarking for roads the entire income from roads, without cross-subsidising other transport modes.

* Even if they do not have a sufficient tax base like EU member countries (developing countries building up road networks for enabling economic take off).

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