



**Innovative Financing for Transport
Schemes:
A European reference resource**

**Briefing Paper 10
Public-Private Partnerships -
Innovative Risk Management
September 2015**



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Sustainable transport for North-West Europe's periphery

Sintropher is a five-year €23m transnational cooperation project with the aim of enhancing local and regional transport provision to, from and within five peripheral regions in North-West Europe.

INTERREG IVB



INTERREG IVB North-West Europe is a financial instrument of the European Union's Cohesion Policy. It funds projects which support transnational cooperation.



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Lead Partner of Sintropher project



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Background

This briefing paper is one of a series that together comprise a European reference resource for innovative approaches to financing transport schemes (capital costs) with particular reference to light rail and tram-based schemes in cities and regions. The approaches are also relevant to capital financing of transport schemes generally.

The resource is one of the Investments undertaken for the Sintropher project funded under the INTERREG IVB North West Europe Programme for transnational co-operation. The overall aim of Sintropher project is to develop sustainable, cost-effective solutions to improve connectivity to, from and within poorly connected regions in North-West Europe - to use innovative transport links to connect peripheral regions of NWE with the core European transport network of high-speed trains, via effective interchange hubs.

There has been a particular focus on tram-train systems which allow local trams to run on to national rail networks, pioneered in Germany, firstly in Karlsruhe and developed in Kassel, which allow urban tram systems to extend over national rail tracks to serve extensive city regions. The project has also looked at other innovative forms of tram systems such as single-track tramways, as well as high-quality transport interchanges that link such systems to major national or transnational rail or air hubs.

The project began in late 2009, with fourteen partner agencies in five EU Member States, and lead partner University College London (UCL): Valenciennes (France); the Fylde Coast (UK); West Flanders (Belgium); North Hesse (Germany); and Arnhem-Nijmegen (Netherlands). Participants included public transport operators, local authorities, regional transport agencies, and universities.

They have worked together on a series of feasibility evaluations, pilot investments and demonstration projects, as well as comparative analyses of EU best practice. The total budget is more than €23m, with funding part-financed by the EU's INTERREG IVB Programme.

A €1.5m project extension in 2014, covers follow-on work to capitalise on results from the initial project, and added a fifth objective: to test technologies for low cost transport links in different territorial contexts, plus integrated territorial corridor plans that help these links unlock wider economic and regeneration benefits; and better recognise these in business cases. This included two new partners (total now 16) and two extra demonstration regions (total now 7) in West Flanders Brugge-Zeebrugge (Belgium) and Saar-Moselle (a cross-border region France-Germany).

Innovative financing for transport schemes - increasingly important

Results in the European demonstration regions, plus topics at Sintropher Conferences and Workshops indicate that new tram-based or tram-train proposals are usually technically feasible and can often offer a reasonably positive investment case - especially if the case goes wider than conventional cost-benefit analysis (CBA) to include realisation of territorial objectives and benefits, such as economic growth and social opportunities.

But implementation can be impeded by lack of available funding due to cuts in public expenditure following the European economic crisis of 2008 and subsequent recovery efforts by national governments. Regions that are weaker in population or economic terms have even more difficulty in justifying an investment case in terms of public expenditure, so innovative financing is of growing importance - and much can be learned from approaches in different European countries.

Innovative Risk Management

Governments are continuously challenged to develop public assets that meet taxpayers' expectations of quality, and also promise to stand the test of time, all while successfully funding the project. Canadian Public Private Partnerships (PPPs) are a means of ensuring an innovative risk management approach to infrastructure funding. They are a long-term, performance-based approach to procuring public infrastructure, and extend local authority's ability to hold the private sector accountable for public assets during their expected lifespan. PPPs draw on the expertise and innovation of the private sector and the discipline and incentives of capital markets, in order to deliver public infrastructure projects.

Innovative risk management schemes transfer a major share of the risk associated with infrastructure development to the private sector. This is accomplished by engaging the private sector in a bundled contract for the life of the asset. This contract connects ongoing operations and/or maintenance payments to the quality of the original construction.

Through IRM, governments do not pay for the asset until it is built and operational. A substantial portion of the contract is paid out over the long term, and only if the asset is properly maintained and performs well, leading to ensured quality control and less upfront capital needed from the public sector. The lifetime cost of the asset is also known upfront, meaning that taxpayers and the public are not liable for costs that arise unexpectedly during the contract period.

Financial Mechanism

IRM is less an exact mechanism than an approach to combine with Public Private Partnerships. As such, each case will demand individual evaluation and analysis.

For in-depth help with analysing whether your project is compatible with IRM financing, click on the link below:

<http://www.p3canada.ca/~media/english/resources-library/files/p3%20a%20guide%20for%20federal%20departments%20%20agencies.pdf>

For in-depth instructions on how to construct an IRM business case, please click on the link below:

<http://www.p3canada.ca/~media/english/resources-library/files/revised/p3%20business%20case%20development%20guide.pdf>

Attractiveness

- IRM projects consider the whole life cycle of the asset
- IRM projects engage the expertise of the private sector; this creates innovation, leading to new technology
- IRM projects ensure private sector capital is at greater risk; this encouraged capital market discipline and incentives for quality on-time delivery
- Removes pressure from public sector for upfront capital, and instead pays private sector over a longer period of time

Risks

- Economic and/or financial crises can hugely impact the success of IRM schemes, and can expose the public sector to major failure if the private partner withdraws during construction
- Private financing is more costly than public financing, with higher borrowing rates
- The private sector is worse at managing risk than the public sector; to mitigate this, a strong public sector plan and risk management assessment must be in place before a private partner is chosen to be brought on board
- Risks can never be completely transferred through IRM; it can be managed, but the public will always be at some level of risk
- Additional and complicated P3 requirements lengthen the selection process and add to delays (if any); however, these can be avoided through the payment-upon-successful-completion approach

Track Record

North America has a particularly strong track record of PPPs being used to fund infrastructure and public projects. Canada has led the way with IRM, creating strong PPP initiatives with risk management features attached to them. As such, local authorities across Canada have used IRM to fund a variety of projects, from public transport to hospitals to bridges and roads. The growing importance of IRM in Canada is reflected by the installation of authorities specifically related to this funding scheme. Provinces such as British Columbia have specialised infrastructure agencies that handle IRM assessments and procurements. Other provinces have integrated equivalent bodies within the central government authorities. As a result, over 100 PPP IRM schemes have been concluded in Canada since the early 1990s, making Canada the leading IRM trailblazer.

Innovative Risk Management: Vancouver Canada Line Case Study

Financial Specifications

Amount(s)

\$2 billion Canadian

Targeted Groups

Private- and public- sector partners

Timeline

Introduced as trial in 2006; 2007, implemented permanently

Why the mechanism was chosen in Vancouver

- To help fund a high-profile project when public funding was not available
- To decrease risk of PPP, in order to deliver project on time and on budget for the Olympics



Financial Specifications of Case Study

Background

The Canada Line is a light rail transit (LRT) project completed in 2009 in Vancouver, Canada. Approved in 2003, the project was completed just before the 2010 Winter Olympics, and was championed as an 'on-time, on-budget' transportation project. The Canada Line cost a total of \$2 billion (Canadian dollars), and consists of 19.5 kilometres of total rail length, with 16 stations, 9 kilometres of tunnels through residential and commercial centres, and 2 bridges.

How it Works

The Canada Line PPP is, to date, Canada's largest transit PPP ever. Having previously used public funding to support the existing SkyTrains in Vancouver, the PPP was an agreement contracted to a private sector company to fulfil a 35-year design-build-finance-operate (DBFO) contract, an approach different from traditional government-led project planning and management. This approach has been acclaimed as an excellent way of financing large projects while reducing the risk of the public sector in the project.

The Greater Vancouver Transportation Authority owns the line, collects all fare revenues and will continue to set system-wide transportation policies and fare levels. During the construction period, the contractor and operator, InTransitBC, was paid after achieving identified milestones. During the operating period, payments will be made to InTransitBC for the achievement of performance targets that measure, for example, train frequency, safety, cleanliness and ridership. The majority of the construction cost, operating cost and maintenance risks have been allocated to InTransitBC. The Greater Vancouver Transportation Authority retains the majority of ridership revenue risk because it markets the system, sets fares and controls bus service to support the line.

Partners

Public Sector Partners

- Government of Canada
- Ministry of Transportation and Infrastructure, Province of British Columbia
- Greater Vancouver Transportation Authority
- City of Vancouver
- Vancouver International Airport Authority

Private Sector Partner

- InTransitBC, a company owned by:
- SNC-Lavalin Inc.
- B.C. Investment Management Corporation
- Caisse de depot et placement du Quebec

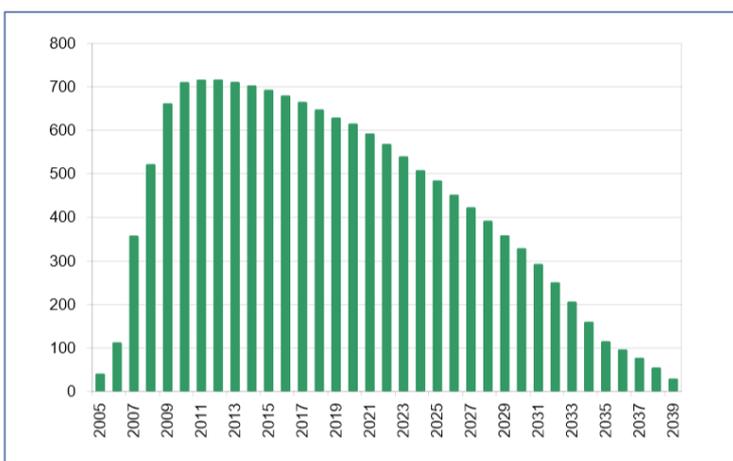
Risk Allocation of PPP

There is a strong allocation of risk to the private sector partners versus if the project were a public-funded endeavour. As well, the private sector was to pay for construction from their own funds, and provide \$700 million for the project upfront, to be paid back with interest by the public sector over the duration of the project life cycle. This removed the public sector from responsibility for cost-overrun risks and placed it on the private sector instead, creating a demand for accuracy and accountability.

However, the private sector accepted this risk allocation scheme in return for

higher payments during the operational payment stage of the project, where the private sector will make its money. Furthermore, the partnership was seen as having a decreasing level of financial risk during the operational phase of the project, as payments to the private sector were based on repayment with interest of the upfront \$700 million, which would decrease as payments were made each year (see below).

Risk	Project	PSC	Phase
Land acquisition cost and schedule	CLCO	CLCO	Construction
Municipal and regulatory permitting, cost	CLCO/ InTransitBC	CLCO	Construction
Municipal and regulatory permitting, delay	InTransitBC	CLCO	Construction
Undisclosed environmental or archaeological liabilities	CLCO	CLCO	Construction
Cost of design build packages	InTransitBC	CLCO	Construction
Cost of construction	InTransitBC	Contractors	Construction
Construction inflation (labour, steel, etc.)	InTransitBC	Contractors	Construction
Construction delay	InTransitBC	CLCO	Construction
Utility relocation cost / delay	CLCO/InTransitBC	CLCO	Construction
Changed ground condition (tunnels and foundations)	InTransitBC	CLCO	Construction
Design integration	InTransitBC	CLCO	Construction
Integration between civil works and systems	InTransitBC	CLCO	Construction
Public protest, legal action, embargo or blockade	CLCO	CLCO	Construction / Operating
Reasonableness of behaviour of Agencies and Cities	CLCO	CLCO	Construction / Operating
Force Majeure	CLCO/InTransitBC	CLCO	Construction / Operating
Insurance costs	lInTransitBC/GVTA	CLCO	Construction / Operating
Condition of civil assets (over the 35-year term)	InTransitBC	CLCO	Construction / Operating
Operating performance (over the 35-year term)	InTransitBC	CLCO	Operating
Operating costs (over the 35-year term)	InTransitBC	GVTA	Operating
Maintenance costs (over the 35-year term)	InTransitBC	GVTA	Operating
Useful life of trains and other systems	InTransitBC	GVTA	Operating
Ridership revenues	~90% GVTA ~10% InTransitBC	100% GVTA	Operating



It is important to note that, despite the seemingly risk-insulated arrangements, there was still a large amount of risk applicable to the public sector. For example, the predicted ridership of the line was estimated at far less than needed to break even on project operating costs during the first 4 years. This introduced a level of financial uncertainty that was knowingly committed to, as the Greater Vancouver Transit Authority was responsible for ridership revenue shortfalls, as per the PPP. As such, public sector risk

was arguably not mitigated within the project, but delayed until later in the project lifecycle. In this way, the project itself was delivered for the Olympics with little risk of incompleteness; however, the financial risk in the aftermath of the Games was still applicable to the public sector, despite the allocation of risk to the private sector.

Benefits

- By entering into a partnership between the Government of Canada, the Province, the Greater Vancouver Transportation Authority, the City of Vancouver, the Vancouver International Airport Authority and InTransitBC, Canada Line Rapid Transit Inc. expects to achieve \$92 million (NPV) in savings, compared to a project solely delivered by the public sector
- The procurement process was fair and competitive, ensuring a good outcome in the form of a Concession Agreement that effectively allocated the risk of the project
- Expected lower net costs than the public sector comparator
- The project is being delivered through a performance-based contract; this ensures a higher standard of scheme, construction, and operation, and promotes on-time-on-budget delivery from the private sector partners
- Ensures that the public benefit from private sector capital, innovation and efficiency as well as from the private sector's interest in a successful system over the long term

Drawbacks

- Borrowing rates are cheaper for public sector than for private; thus, rates may not have been as affordable as they could have been without the private sector involvement
- Higher cost of a public alternative was due to double-counting the risk of the private sector abandoning the project; however, it is arguable that a \$2 billion project would not simply be abandoned, and would be kept operational even if the private sector abandoned the contract during the operations phase
- Focus on efficiency means that the project technology is incompatible with the other light rail transit lines within the city; could lead to future difficulties if extending the system or connecting with other lines
- Private sector cost margins meant that original engineering plans were neglected, and a cut-and-cover construction plan was put into effect rather than the original bore tunnel plan
- Disruption to local economy

Assessment

Success of Financial Mechanism

The success of IRM comes from its ability to deliver a project with reduced risk. Especially for public projects that are needing extra capital, or for large infrastructure projects with specific deadlines or cost budgets, IRM makes an option that is bespoke for the purpose of a successful project delivery. Recent movements in scheme appraisal have recognised that traditional appraisals may not necessarily give an accurate view of how beneficial a project will be, and thus public funds cannot be allocated to them. Using IRM, the potential risk of a project no longer weighs solely on the public realm, even in a PPP.

In Vancouver, the success of IRM was also seen through the on-time-on-budget delivery of the project. Furthermore, a variety of interests held by government agencies and departments were behind the Canada Line (including major events and transportation demands). By taking multiple interests into account, the project became subject to less risk.

Through a specific and detailed timeline, clear identification of tasks and responsibilities, and timely reporting on project status, the Canada Line was kept transparent and accountable through private sector accountability. This reduced the risk and encouraged strong communications between the private and

public sectors, so as to make sure that no risk was accidentally absorbed by either party beyond what was originally agreed upon.

Public Perception

The overall public perception of the Canada Line project was well-received, with a strong focus on the need for a public transit link running from north to south. However, a large amount of opposition to the project occurred when the private sector decided to implement a cut-and-cover strategy, compared to the original plan of a bore operation. As such, the public perception of the partnership darkened. This did not affect the overall perception of the scheme in the long term though, and overall the Canada Line has been cited as a leading example of IRM in North America.

Future Prospects and Transnational Relevance

- Transparency must be a focal point of IRM, in order to ensure that all targets are met satisfactorily to both the public and private partners
- This is essential for any municipality that uses IRM
- Successful implementation of IRM in a PPP depends on recognition of partner's objectives
- PPPs require careful consideration of control and management systems through project agreements

IRM is an important funding option for any local authority, especially those who are dealing with larger-scale projects with small amounts of public capital. It is applicable in urban areas (including slums and informal settlements), small towns, and rural areas, as long as a serious private partner can be found; thus, it is a viable option for a wide range of projects and schemes. PPPs using IRM are not necessarily required to take over the large-scale operations of a transport scheme. Contracts can also be made for small, specific sectors, as well as flexibly created so as to fit a unique circumstance or project. As such, the applicability of IRM is suited for both local and national levels.

IRM is not recommended in the case of projects which result in fast progressions or speedy technological changes, as it would be difficult to determine the standard of services required over the long-term, and would decrease the level of certainty to an unacceptable risk. The provision of a level of flexibility in an IRM contract would be necessary in this circumstance, in order to adapt to such rapid changes, and at the same time to foresee and agree in advance on the cost of any changes; thus, it is not recommended as a funding mechanism in these circumstances.

Transnational relevance: Europe-wide

Funding of major transport schemes is an issue faced by many cities and regions across the North West Europe Programme area and indeed more widely across Europe. Traditionally, in most countries tram-based links have been financed by public funding from national or regional government authorities, sourced from either taxation or borrowing or a combination. (In regimes where there is a national or regional transport infrastructure authority, operating profits may also assist).

But as with Sintropher partners, implementation of such schemes is facing a lack of available funding due to cuts in public expenditure following the European economic crisis of 2008 and subsequent efforts by national (or regional/city) governments, to recover. So innovative financing is of growing importance, and much can be learned from approaches in different European countries.

The financing approaches and city/region case examples on the reference resource are context-specific and reflect:

- the geographical context: the physical scale of the scheme and scale of capital cost. Obviously a major scheme with high capital cost of, say, €50m + may be beyond the resources of a single city or regional authority, and require a national contribution in a “cocktail” approach. The investment case will usually be stronger in a major dense metropolitan area than smaller regions with lower population and (possibly) lower or weaker economic activity.
- the organisational context: which level of government and/or relevant transport authority or agency is the primary initiator of the scheme - national, regional, or city - will influence the financing opportunities and options available.
- the legal context: the nature and extent of the powers and responsibilities of the initiating authority, and the processes/procedures, to actually pursue any of the financing approaches.
- But even though the various approaches and case examples are context-specific, their transnational relevance is strong:
- the approaches offer a stimulus and possibilities for wider thinking by cities and regions in other European countries, about how to assemble capital financing for transport schemes,
- in all countries, the reality of capital finance for transport infrastructure means that a “cocktail” approach is often the most practical way forward - and the approach of mixed public-private sector finance is an increasingly pragmatic basis
- some or all of the various approaches might be potentially adaptable within the particular organisational and governance regime of another country, using similar powers or processes
- the approaches offer possibilities for lobbying by city and regional authorities, in order to secure from national government the powers and competences to utilise new approaches (as has happened in the UK - for example local authorities have in recent years acquired powers to implement tax increment financing (TIF) although subject to safeguards over risk and borrowing; similarly, powers to enact a community infrastructure levy (CIL) on developments in their area, subject to local consultations and examination of viability and fairness for private developers.

The reference resource should be seen from this perspective, as a means to promote knowledge transfer and learning across different NWE countries and regions.

Further information

This paper was produced by UCL Bartlett School of Planning (Sintropher team members Charles King, Giacomo Vecia, Imogen Thompson) using desk research and expert comment. The paper reflects the views of the authors and should not be taken to be the formal view of UCL or Sintropher project.

The European reference resource can be accessed on the following:

Sintropher project website

<http://www.sintropher.eu/publications>

POLIS website

<http://www.polisnetwork.eu/sintropher> or <http://www.polisnetwork.eu/res/resources>

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