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Light Rail Projects Financing

Financing Public Transport Infrastructure and Systems:

**Fundamental Approaches and International Examples
of Private Financed Projects**

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Public Sector Network Infrastructure

e.g. urban transport, urban utility networks, energy, telecommunications

- **Social welfare prior to financial revenues**

- **Key features of public infrastructure projects**
 - High capital expenditure
 - Long payback cycle & low potential profitability
 - High uncertainties and high social, environmental, political and other risks during construction and operation
 - Strong local monopoly of the operator



Shifting a public project into the private sector

■ Public Implementation

General problems

developing countries

- Scarce public funds
Lack or delay in financing
- Insufficient know-how

advanced economies

- Insufficient service quality
- Bureaucracy and project delays, low efficiency
- Decreasing public funds

■ Private Participation

Potential benefits

- Private capital participation
Mobilisation of funds
 - Leveraging public resources

 - Higher efficiency & quality
Higher profitability
- +
- Innovation potential
 - Know-how transfer
 - Fair and open competition



Private Sector Participation (PSP)

■ Key aspects

- Shift of **risks & responsibilities** in public sector projects to private stakeholders
- Sharing of Revenues: user charges and/or public subsidies

■ Crucial criterion for PSP

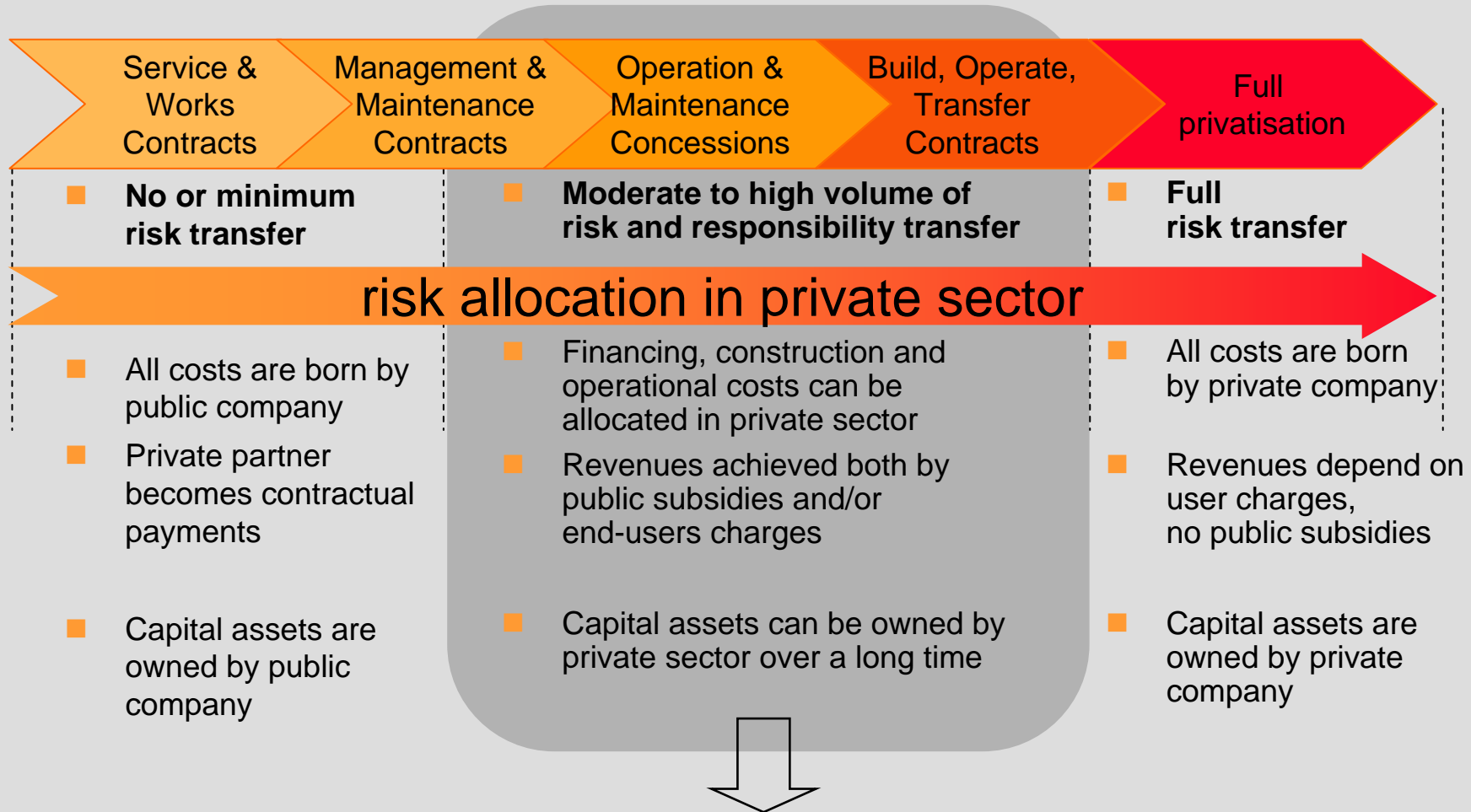
- Involvement of private sector should bring more **“value for money”** and **social benefits** for end users



better quality
higher capacity
more efficiency
higher profitability



PSP Modes - Risks Transfer



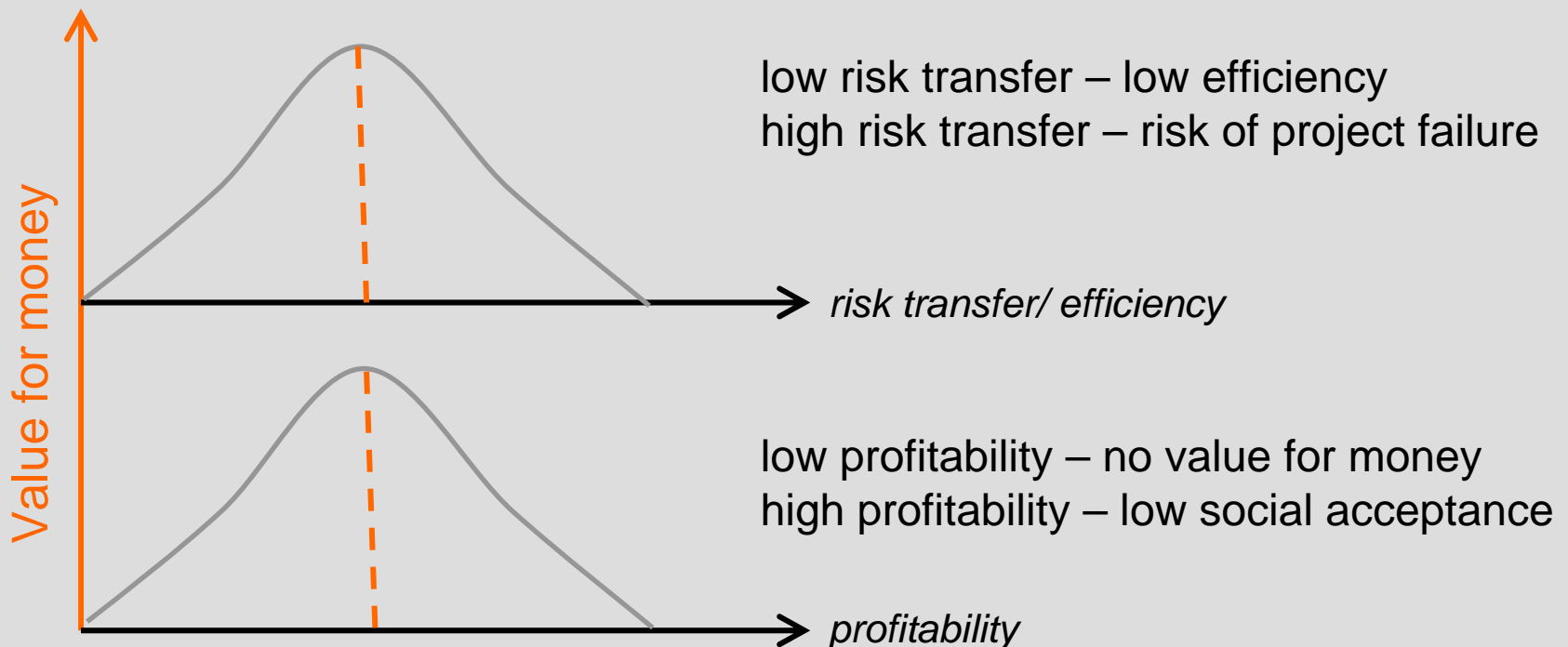
Private-Public Partnerships (PPP) zone

Public-Private Partnerships (PPP)

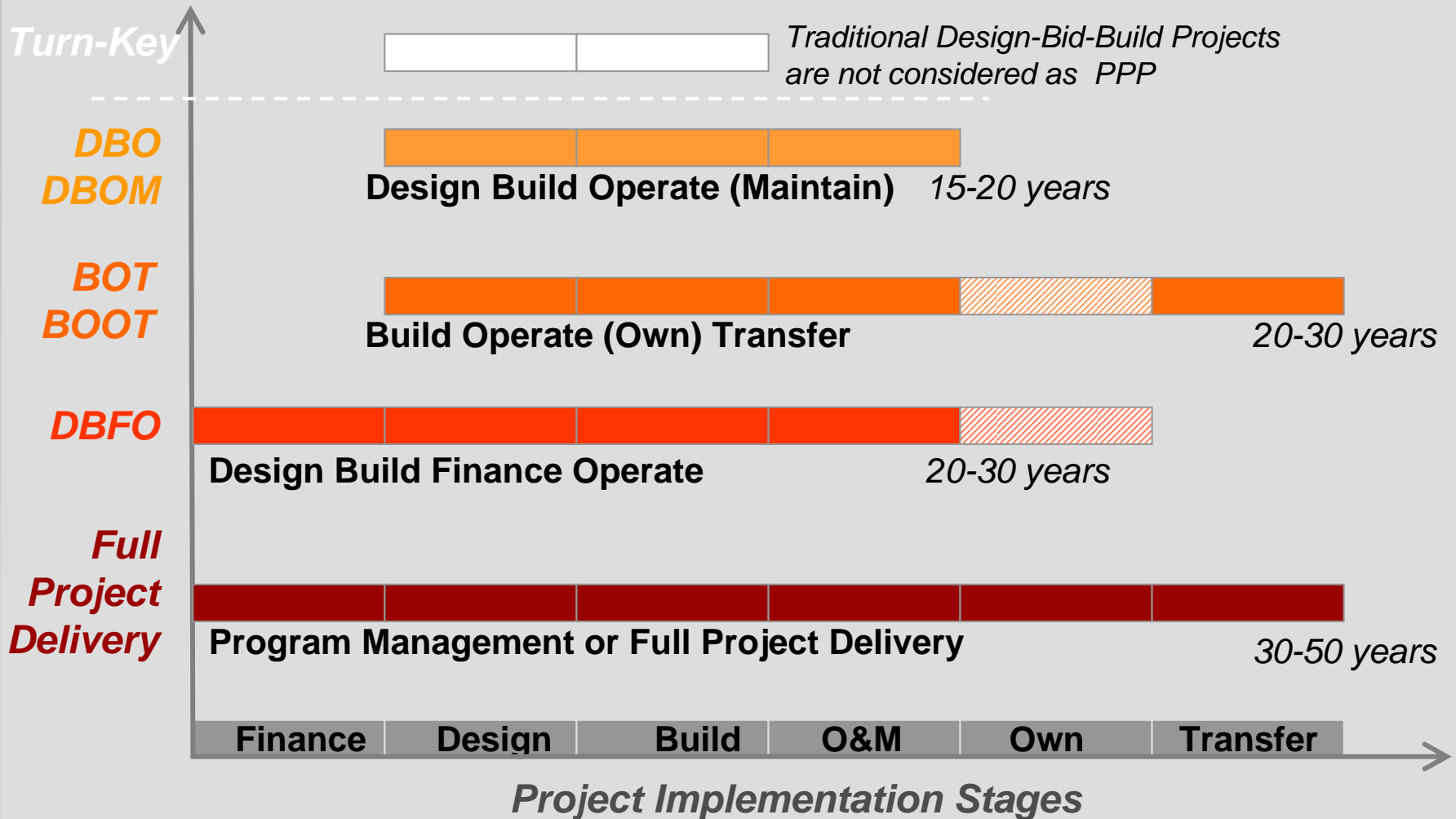
■ Key Features

- **well-balanced risk-sharing** between public and private stakeholders on a **partnership basis**

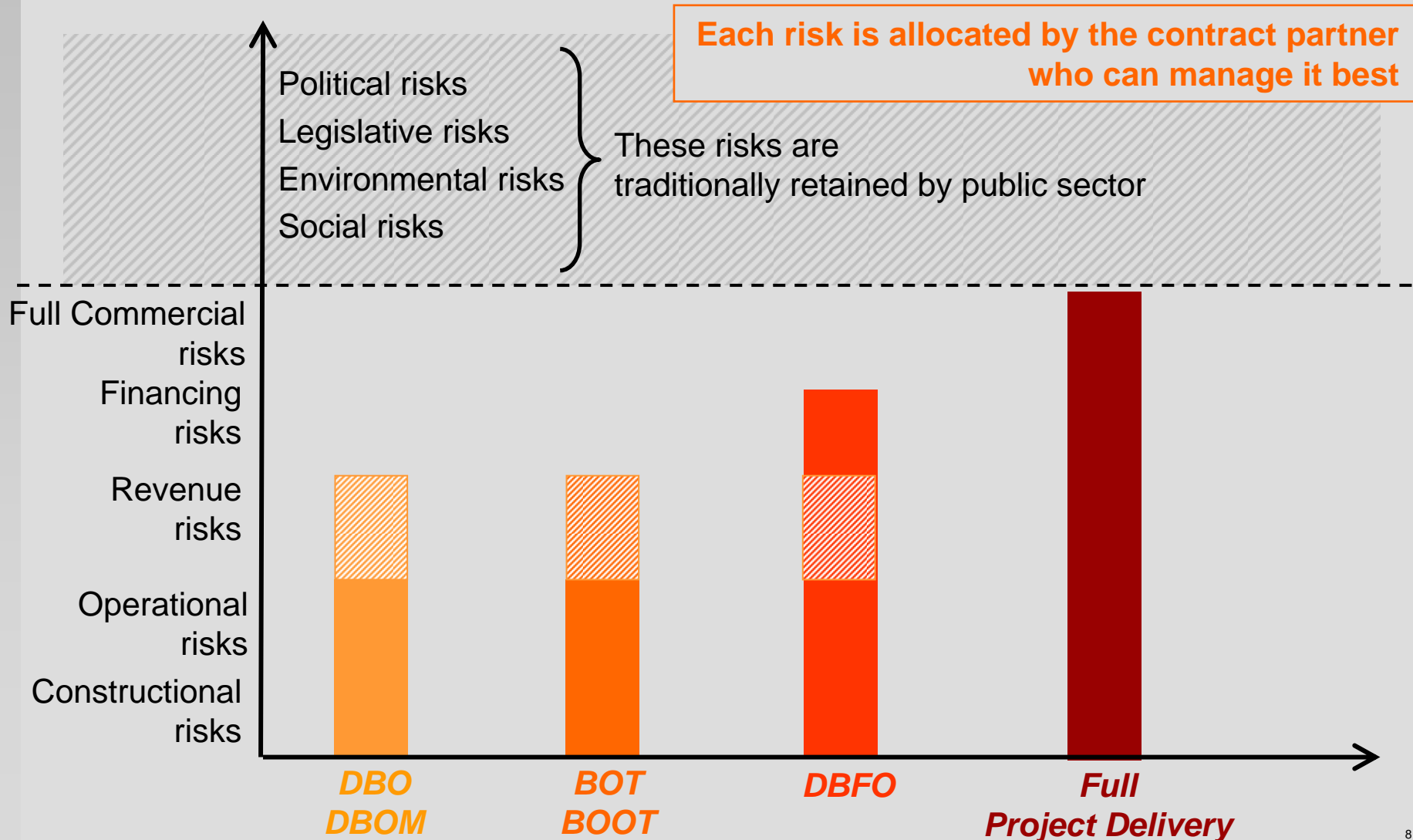
■ Key Challenge – finding the right ratio



PPP Structures for capital delivery projects



PPP Structures – risks transfer





PPP Structures - benefits and barriers

■ Benefits

- Integrated project process
- Improved risk management and project planning
- Better life cycle costs
- Faster project implementation
- Cost savings and accountability
- Innovation and know-how transfer
- Private Financing makes costly projects possible

■ Barriers

- New method with little accumulated expertise
- Long tendering process
- High tendering costs



PPP Structures – finding the right model

■ Key selection criterion

- Lack of financing
- Efficiency & Quality issues

DBFO, BOOT and other structures with private capital participation

BOT, DBOM and other structures with integrated project development

■ Other selection aspects

- Existing legal framework
- Existing local practice and historical background
- Individual client expectations
- Social, environmental and political issues



PPP – present needs & future challenges

- Accumulating and Analysing **Practical Expertise**
- Working out **Standardized Recommendations** and Legal Framework
- Developing **Benchmarking Techniques** to Assess Added Value for Money in PPP Structures
- Developing **Selection Criteria** for the Best PPP Model in Each Case
- Refining Existing PPP Models and Developing **New Innovative Structures**

Copenhagen Mini-Metro

Light Metro Line (with ATO)

Ørestad Development Corporation (ØDC) is owned jointly by Copenhagen Municipality and the Danish state. ØDC was enjoined with two tasks: to develop the area Ørestad and to build a Metro in Copenhagen. Total cost: 1.5 bn €

- Principal:
- Undeveloped land was given to ØDC (ca. 5.0 x 0.6 km)
 - ØDC could take up loans for building the Metro
 - The Metro will raise value of land
 - ØDC should develop and sell land
 - Pay back loans



The cost will be met by selling land (50%), operation profit from the Metro (30%), in lieu payments of real estate taxes (10 %) and direct payments from the owner not contributing land themselves (10%).

It is estimated, that the Metro will be free of dept after 30 years.

Operator: Ansaldo Transporti (5 Years, also delivering of vehicles)



Croydon

(D)BFO

Low Floor Light-Rail Line

Two tender phases: Design / BFO (in fact, one consortium won the design tender, another won BFO tender)

BFO-Consortium:	Construction:	Amey and Sir Robert McAlpine
	Operator:	Centre West Buses
	Supplier:	Bombardier ProRail
	Finance:	Royal Bank of Scotland



Track and rolling stock are financed through leases (sale-lease-lease back)

The manufacturer (co-shareholder) has concluded a tram maintenance agreement

The concession is for 99 years, but the operator (co-shareholder) can be replaced when EU legislation requires periodic tenders for operator services

Concession granted by British government; Authority functions delegated to London Transport -> Reorganisation of bus services to a feeder system and fare structure comparable to the rest of London Transport network



Buenos Aires

DBOM

Renewal and Extension of Metro system

1991 Tender by the Argentinean State and World Bank

1993 Acceptance of bid of a consortium of majoritarian Argentinean companies



Concession contract:

- **Infrastructure remains in possession of the City of Buenos Aires**
- **Operation and maintenance are under control of the consortium**
- **Operational cost and revenue risk remain to the consortium**
- **The consortium is bound by contract to defined investments to the infrastructure during the first 5 years**
- **The investments to the infrastructure conduce to upgrade the attractiveness and will lead to an increase of revenues**
- **When exceeding a defined gain limit -> Duties to the state**



Bangkok MRT

BOT

Heavy Metro Line (21 km)

- **Financing: Private investors using a mixed loan configuration**
- **Operator: BTSC – Bangkok Transit System Company Ltd (Private)**
- **Duration of Concession: 30 Years**
- **Start of service: 1999**

Experience:

The operation of Bangkok MRT is profitable.

Public payments for the co-financing are not used.

The benefit is too low to pay off the credits and interest payments for the mixed loans.

Start-up phase with a lower ridership than forecasted – absence of public authority led to a lack of integration of all public transport modes (problems with concurrency of bus operators and fare integration meanwhile reduced) .





Hong Kong

Metro System and Airport Express

- **Operator: MTRC – Mass Transit Railway Corp. is a joint venture with a majority of shares privately owned**
- **No direct public subsidies, but where as development rights/ land rights are granted which is a sort of indirect subsidy.**



Experience:

Private bus operators cooperate with the metro system on the level of fare integration (Octopus Card).

Modal share of public transport in Hong Kong is about 85 % of all trips resulting from a push and pull strategy (provision of an attractive, comfortable, fast and reasonable priced public transport system and a restrictive framework for car ownership).



Strasbourg Tramway

DBO

Low-floor tram network

There is a unique institution in France:

The “Caisse des Dépôts” providing financial and management services to French communes.

The Caisse is equity investor, credit provider and transport manager (subsidiaries Transdev and Transcet).

Thus many of the advantages claimed for private finance and risk sharing can be realised within an essentially public framework.

Financing: 930 MF subsidies (State / Municip.) / 830 MF privat Banks

Reason of high share of public subsidies: Tramway is central part of a very complex urban planning exercise (closing through traffic, enlarging pedestrian areas, P+R-facilities, bicycle-network etc.).

Operator: CTS – Compagnie des Transports Strasbourgeois (80 % municipality and departement, 17 % Caisse d. D. / Transcet)

Rolling stock supplier: The British (!) subsidiary of the then ABB (later ADtranz)





Manchester Light Rail System

DB(F)O

Light Rail network

Implementation process in two tender phases:

Phase 1: Public funding and finance associated with private concessions -> construction and commercial risk to the private only

Phase 2: Private financing of 2/3 of the extension investment

Concession by: ALTRAM Ltd.

- John Laing (construction)
- Ansaldo (vehicles)
- Serco (system manager)
- 3I (financial institution)

Finance (2nd phase): Free use of existing network (phase 1)
32 mio £ Manchester / British government
10 mio ERDF (European Union)
95 mio ALTRAM

ALTRAM is obliged to find an agreement with local bus operators regarding through ticketing.





Conclusions

The share of private sector to public transportation projects often is quite limited because of:

Projects are created on a political background – Municipality often will / can not abdicate to exert influence on the project.

Duration of concession is 20 to 50 years – no warranty of political continuity and – on the other hand – stability of the consortium / operator.

Light Rail and metro systems mostly are not in a monopoly position (like water or power), but in concurrency position to other transport means (mostly bus) or private cars. Public authorities are needed for regulation.

Public transport often can not be performed profitably without subsidies at least to the infrastructure.