



# Delegation Bugsas Ankara 31. October 2008

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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***

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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

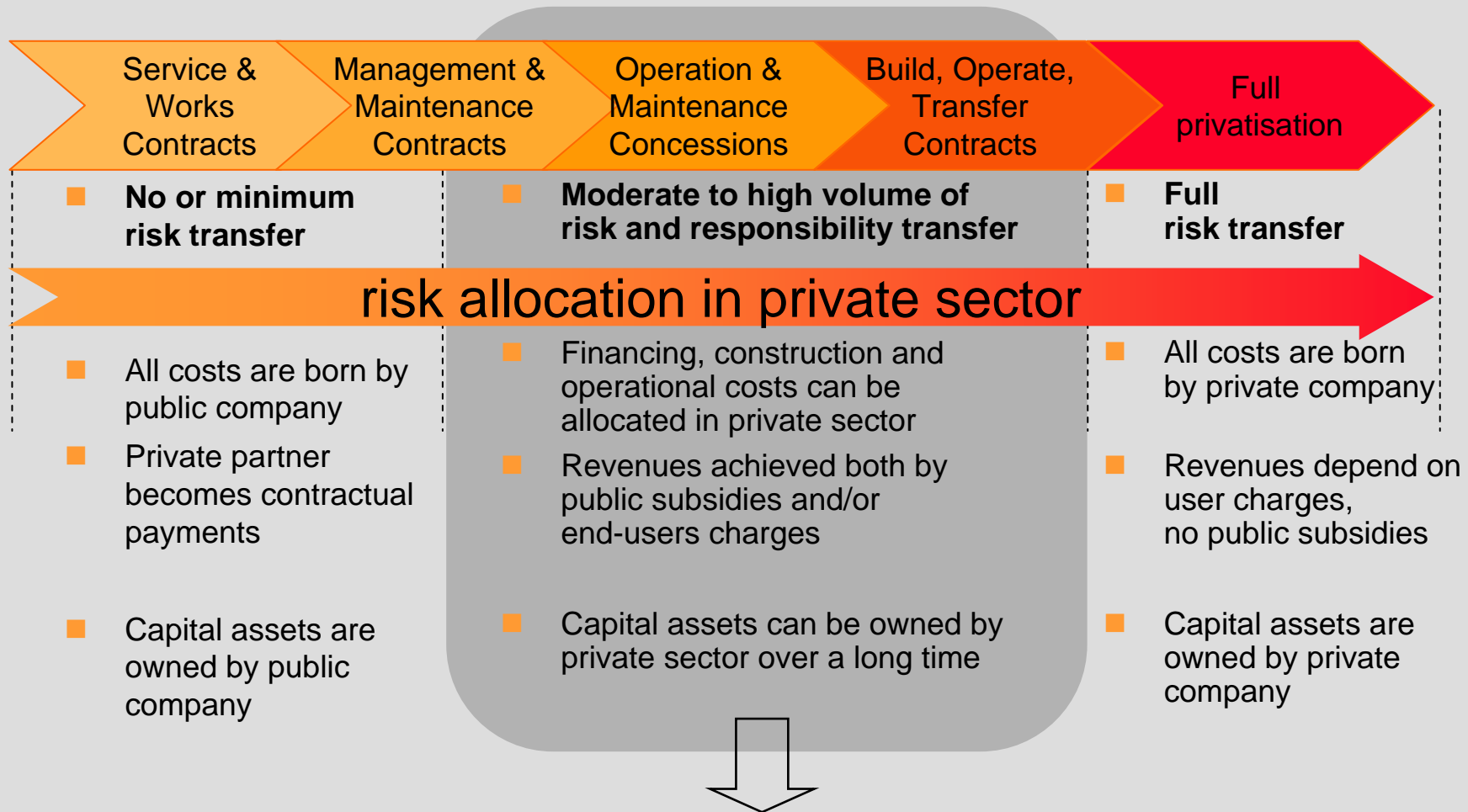
- Involvement of private sector should bring more **“value for money”** and **social benefits** for end users



**better quality**  
**higher capacity**  
**more efficiency**  
**higher profitability**



# PSP Modes - Risks Transfer



Private-Public Partnerships (PPP) zone

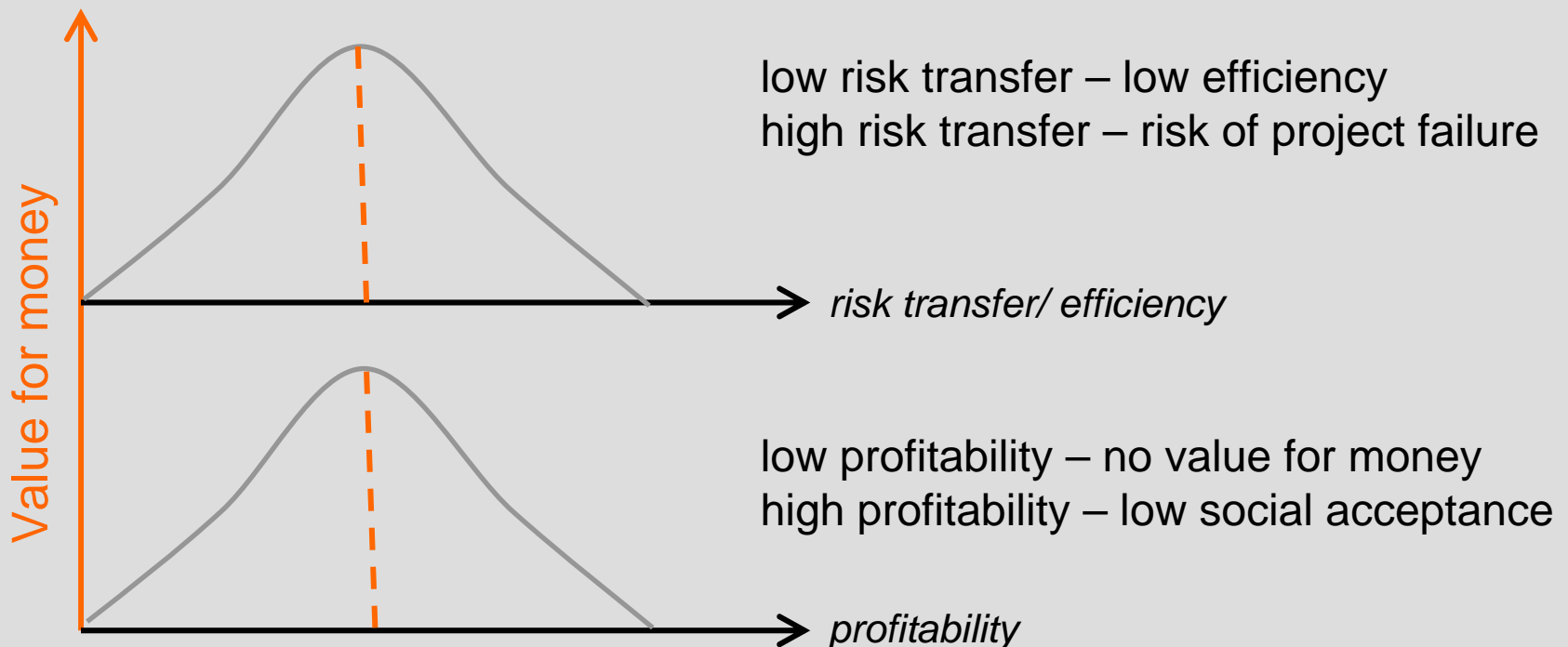


# Public-Private Partnerships (PPP)

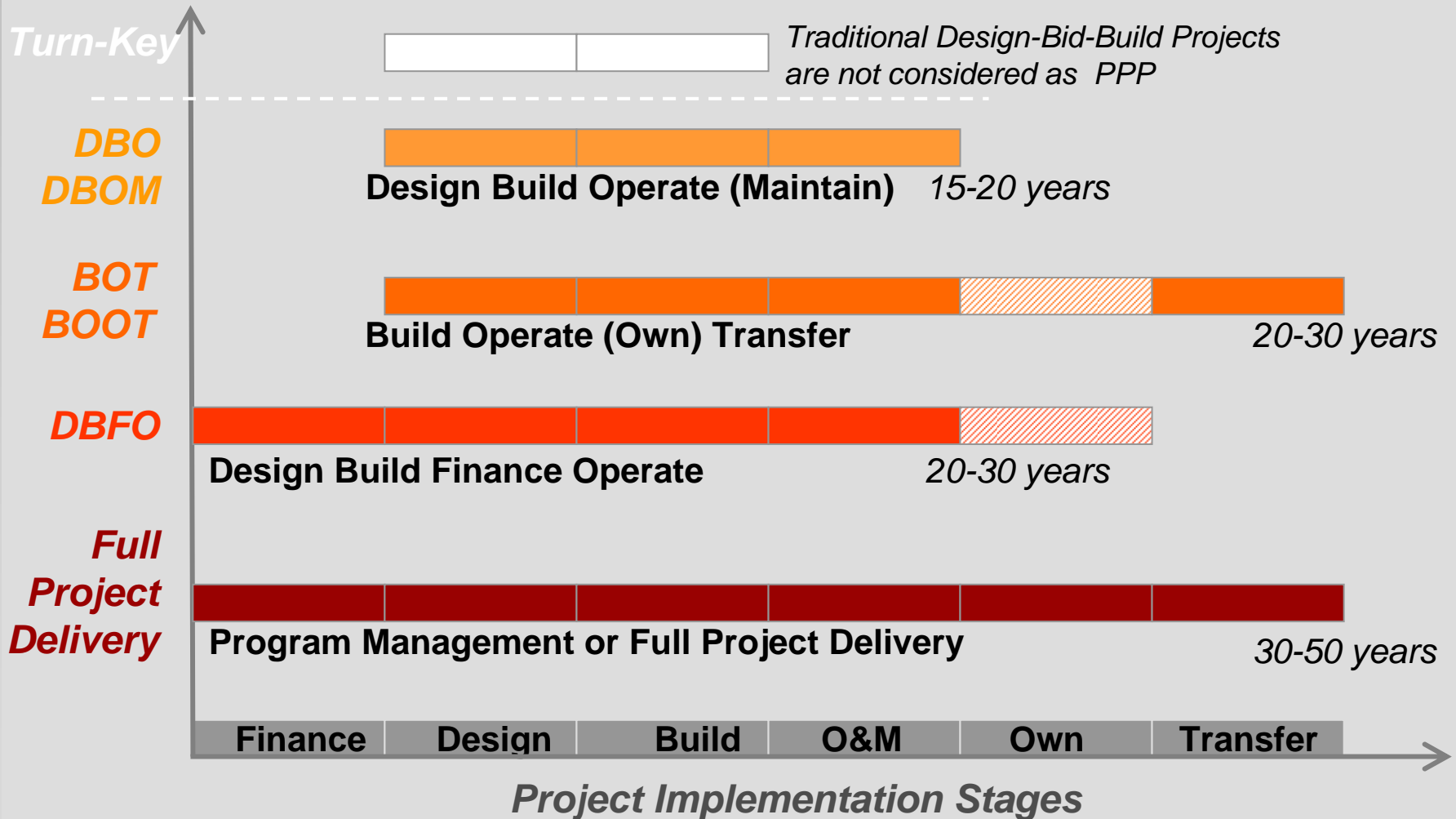
## ■ Key Features

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

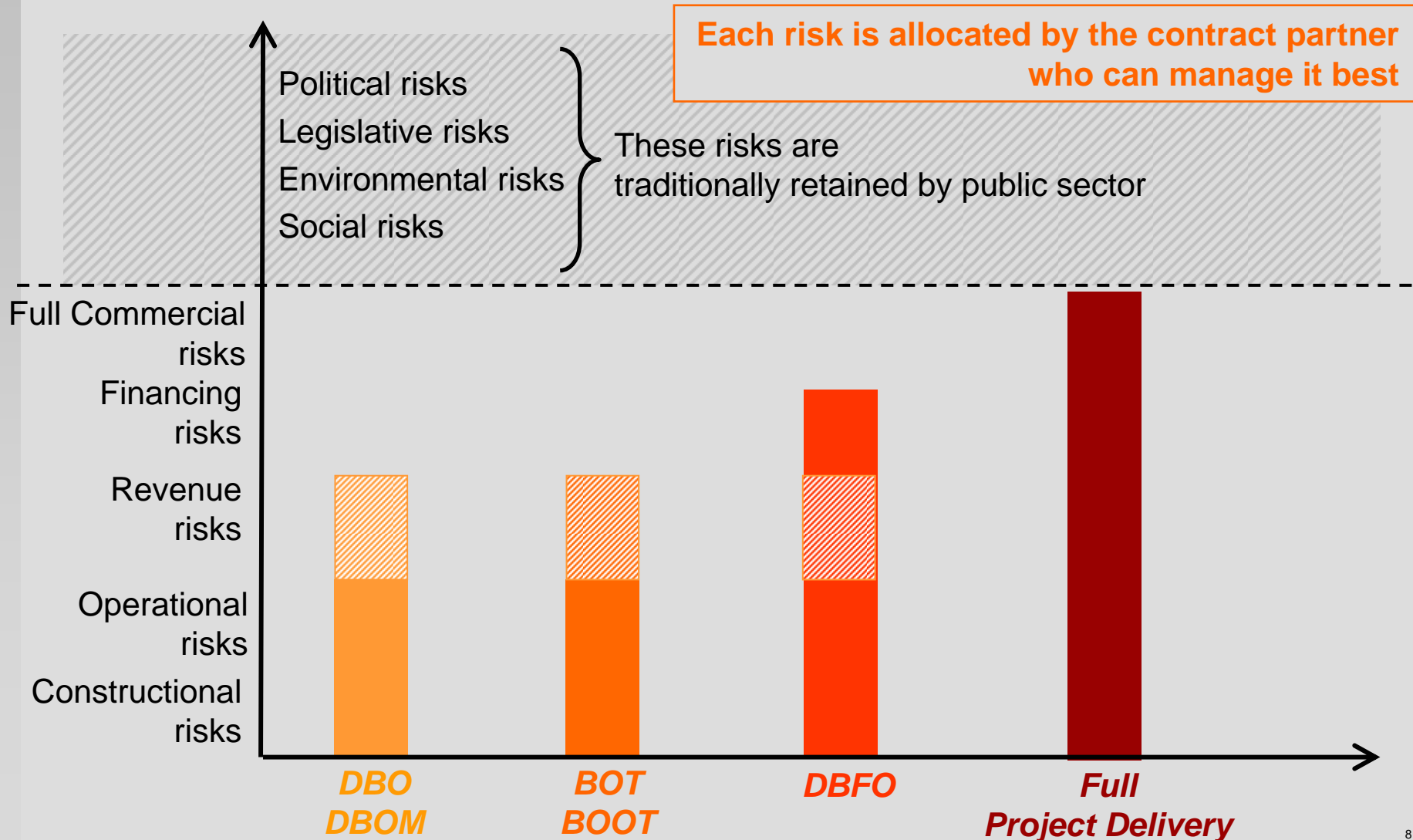
## ■ Key Challenge – finding the right ratio



# PPP Structures for capital delivery projects



# PPP Structures – risks transfer







# ***PPP Structures - benefits and barriers***

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## ■ 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***

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- 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)

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



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***

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**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.**