

Integrating Congestion Charging and Mass Transit Systems

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Outline

- Why congestion charging is needed
- Case studies
- Life-cycle of road pricing policy development
- Implications for Thailand

Why Congestion Charging and Mass Transit?

London Planning Advisor Committee (LPAC), 1980s

“Improvement of public transport by itself was not seen as sufficient; there was a need for direct measures to restraint road traffic and to obtain a better balance between the demand and supply of road space, which congestion charging was seen as the most favourable.”

- Experiences from all cities have been proved that public transport improvement alone cannot cope with transport problems.

Why Congestion Charging and Mass Transit?

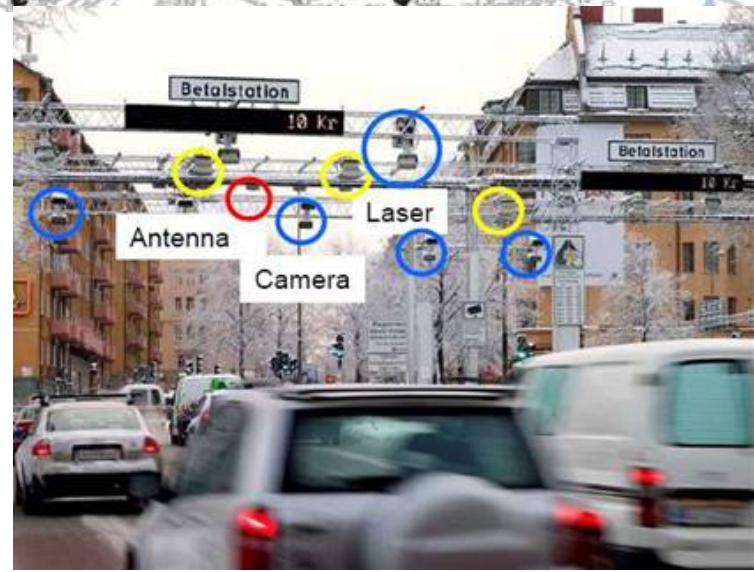
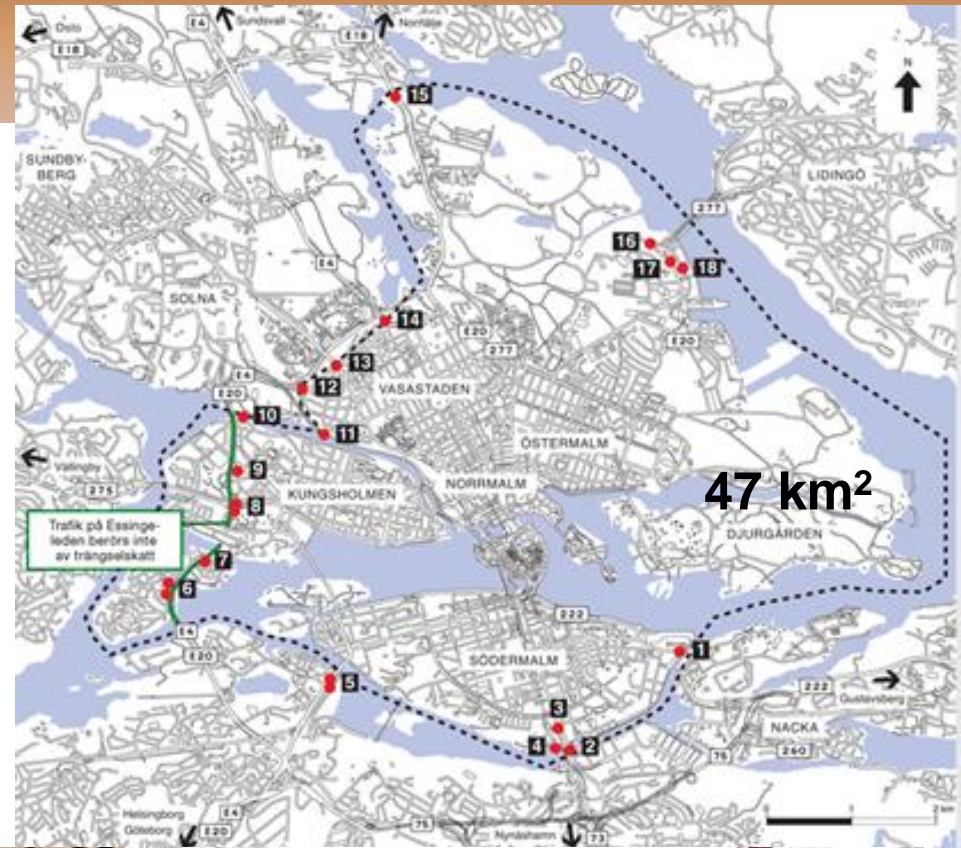
- It is clear that a package of instruments is likely to be more effective than selecting any one instrument on its own.

“Road pricing encourages greater use of light rail and generates revenue to pay for the light rail. Conversely the use of revenue to invest in light rail which makes road pricing more acceptable and provides an alternative for those no longer able to drive.”

(May et al., 2003).

- It is possible to design congestion charging schemes which are effective and acceptable to the public (Jaensirisak, May, Wardman, 2002)

Stockholm congestion tax 2007



London Congestion Charging 2003



See Transport for London Web site
(www.tfl.gov.uk)

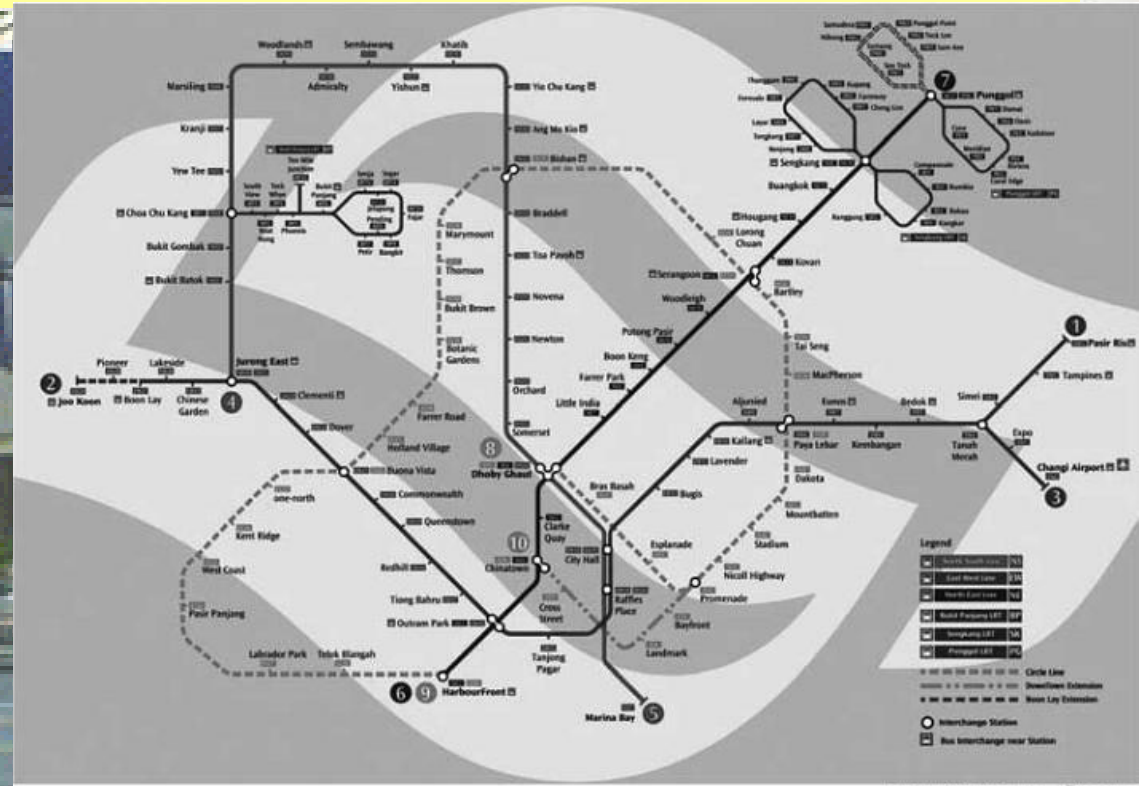
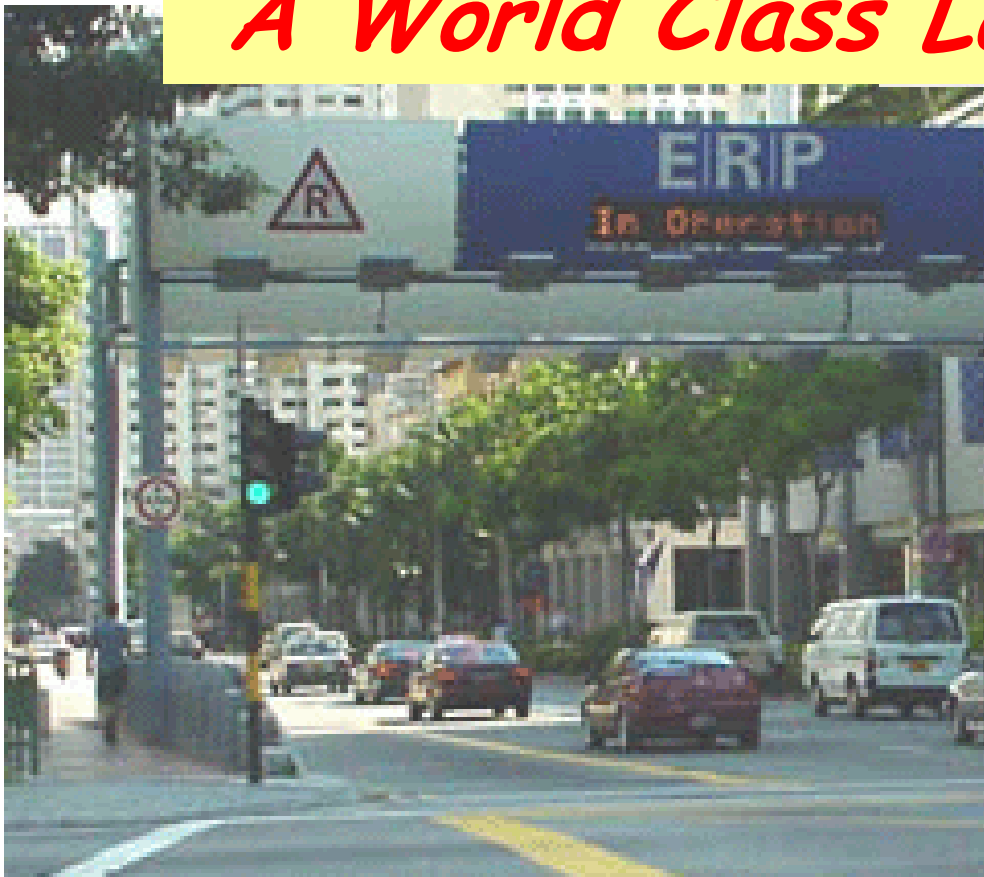
- Bounded by the Inner Ring Road
- 7am-6:30pm, Mon.-Fri. excluding Public Holidays
- £8 per vehicle per day (£5 before 4 June 2005)
- Discount for e.g. residents who live in the zone, disabled people, taxis, coaches and minibuses
- Exempt for e.g. emergency services on behalf of the NHS, police, fire, ambulance

Singapore

- Road pricing 1975
- Electronic road pricing (ERP) 1998



"A World Class Land Transport System"



Singapore in 1970



Lessons learnt from Singapore (1)

- **Early 1970s – package policy**

- Land use and transport planning
- Road development
- Traffic management
- Public transport improvement
- Travel demand management,
 - Starting with Road pricing

Supply-side management

Demand-side management

- **1975 - road pricing was started**

- No expressway
- No MRT
- Only bus improvement

Car users have Choices

- pay and use car
- change time of travel
- change route
- use bus
- abandon trip

Lessons learnt from Singapore (2)

Planning and organisation

- Urban planning is critical, it came before transport planning.
 - Housing Development Board (HDB) 1960
 - **Urban Redevelopment Authority (URA)** – Concept Plan 1971 and 1991
 - URA responsible for planning (linking with HDB and LTA)
- **Land Transport Authority (LTA)**
 - Set up in 1995 (from combined 4 agencies: registration, road, bus and MRT)
 - 1996 White paper - “**World Class Land Transport System**”
 - 2006 Land transport masterplan – “A **People-Centred** Land Transport System”

Lessons learnt from Singapore (3)

Key success of a “World class land transport system”

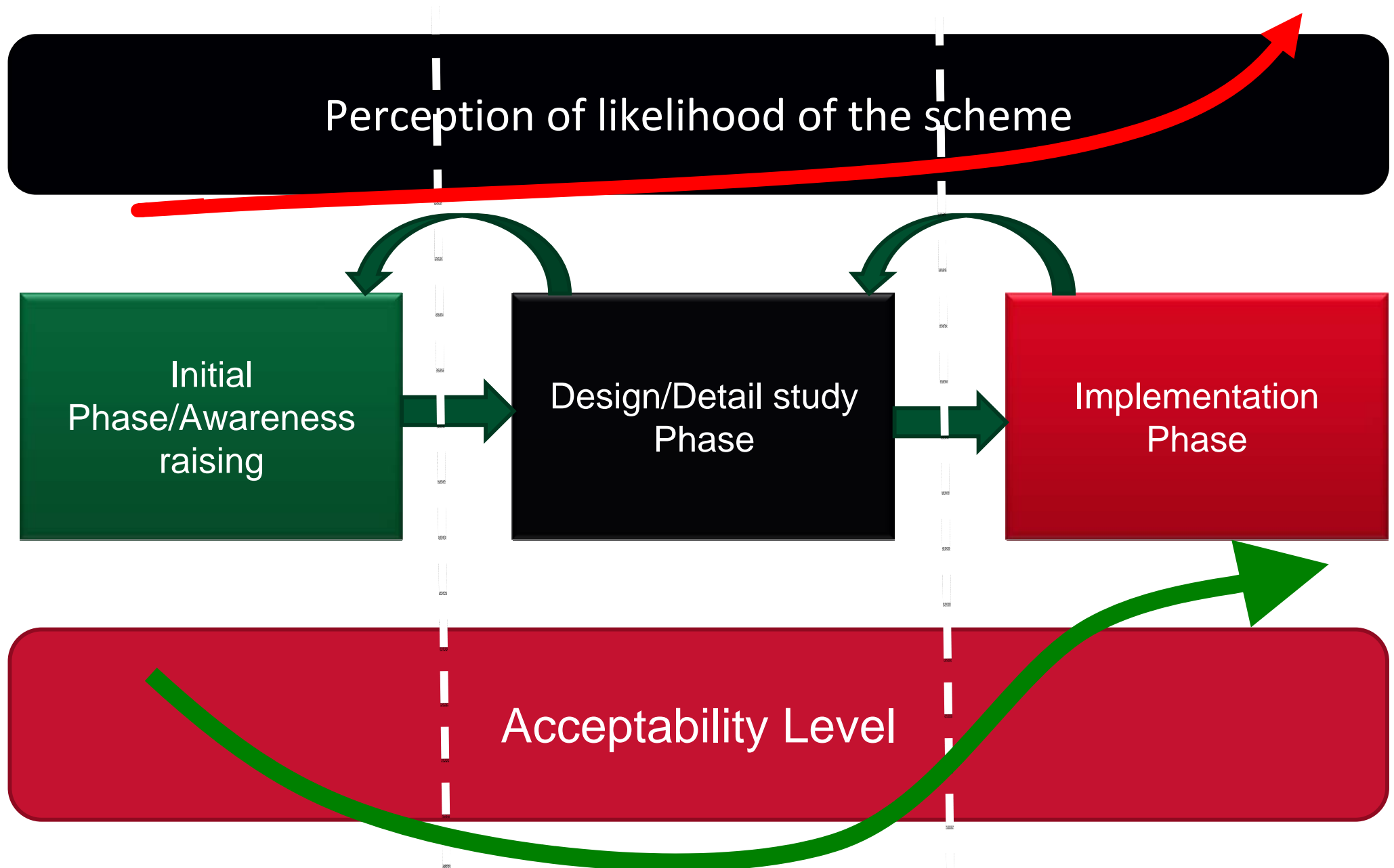
- **Integrated transport and land use policy**
 - Road pricing in 1975
 - The first MRT line in 1988
 - Vehicle quota system – Certificates of Entitlement (COE) in 1990
 - Road and traffic management (Expressway, parking, ITS, etc.)
 - Public transport improvement (Both MRT and Bus)
 - Land use planning (strong Transit-Oriented Development)
- **Government’s credibility** – “everyone recognizes that we do have a government that is rational, that **we have unpopular but necessary policies**, but they accept it” (Richmond, 2008)
- **Good public relationship**

Hong Kong: Integration role of TOD and RP

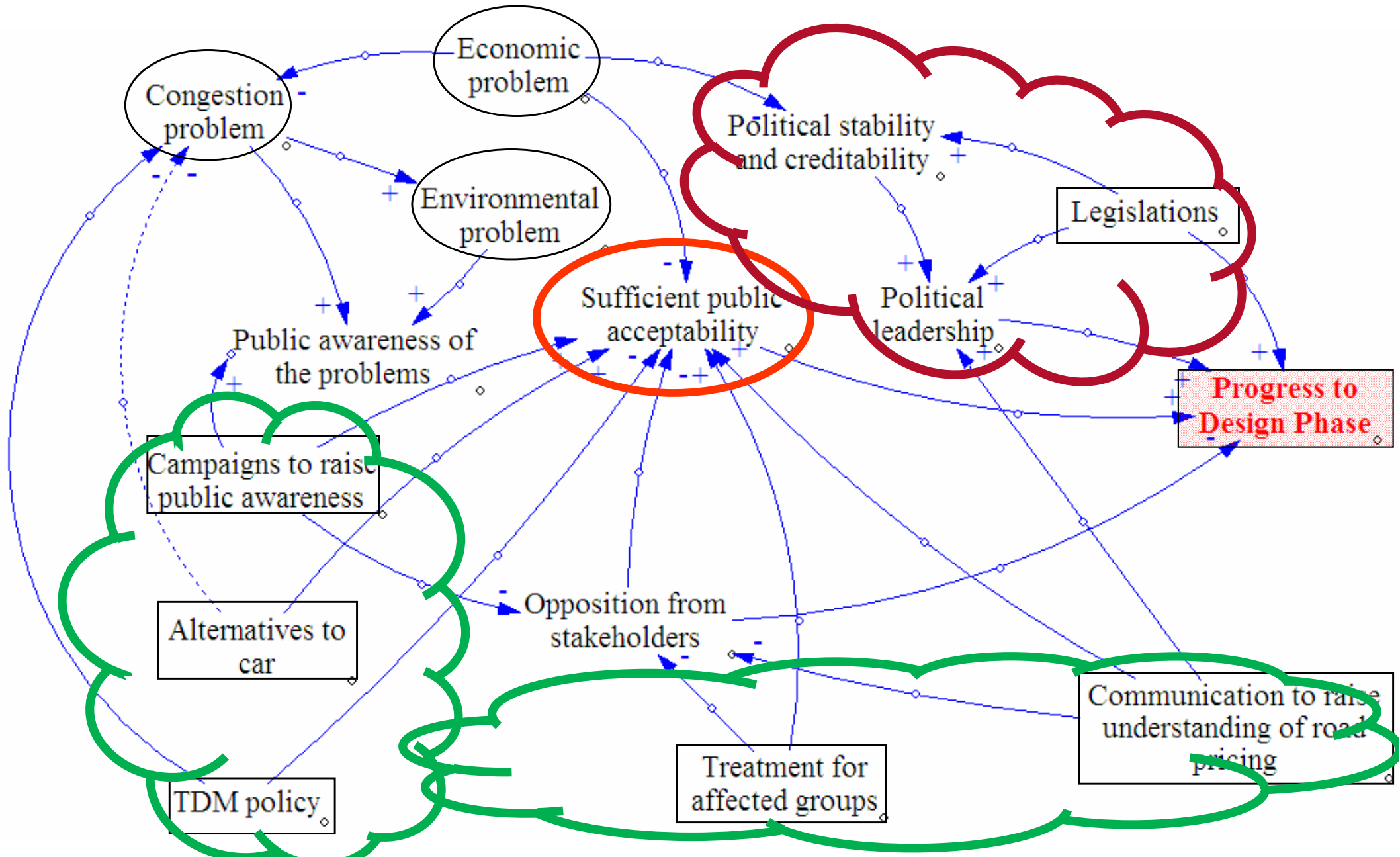
- In HKG, TOD is one of the main urban policy to control land-use density and ensure the sufficient ridership of transit mode.
- However, the problem of congestion still remains and the idea of road pricing has been discussed for several decades.
- In fact, Road Pricing and TOD can be seen as a complimentary measure in which:
 - RP provides initial public fund for TOD development as well as ensure the competitiveness of transit mode
 - TOD increases the acceptability of the scheme (i.e. people can easily access transit mode) and reduce car dependency
 - RP is an approach to internalize the externality and TOD is an approach to regain back the external benefit (from property developer)!

Life-cycle of road pricing policy development

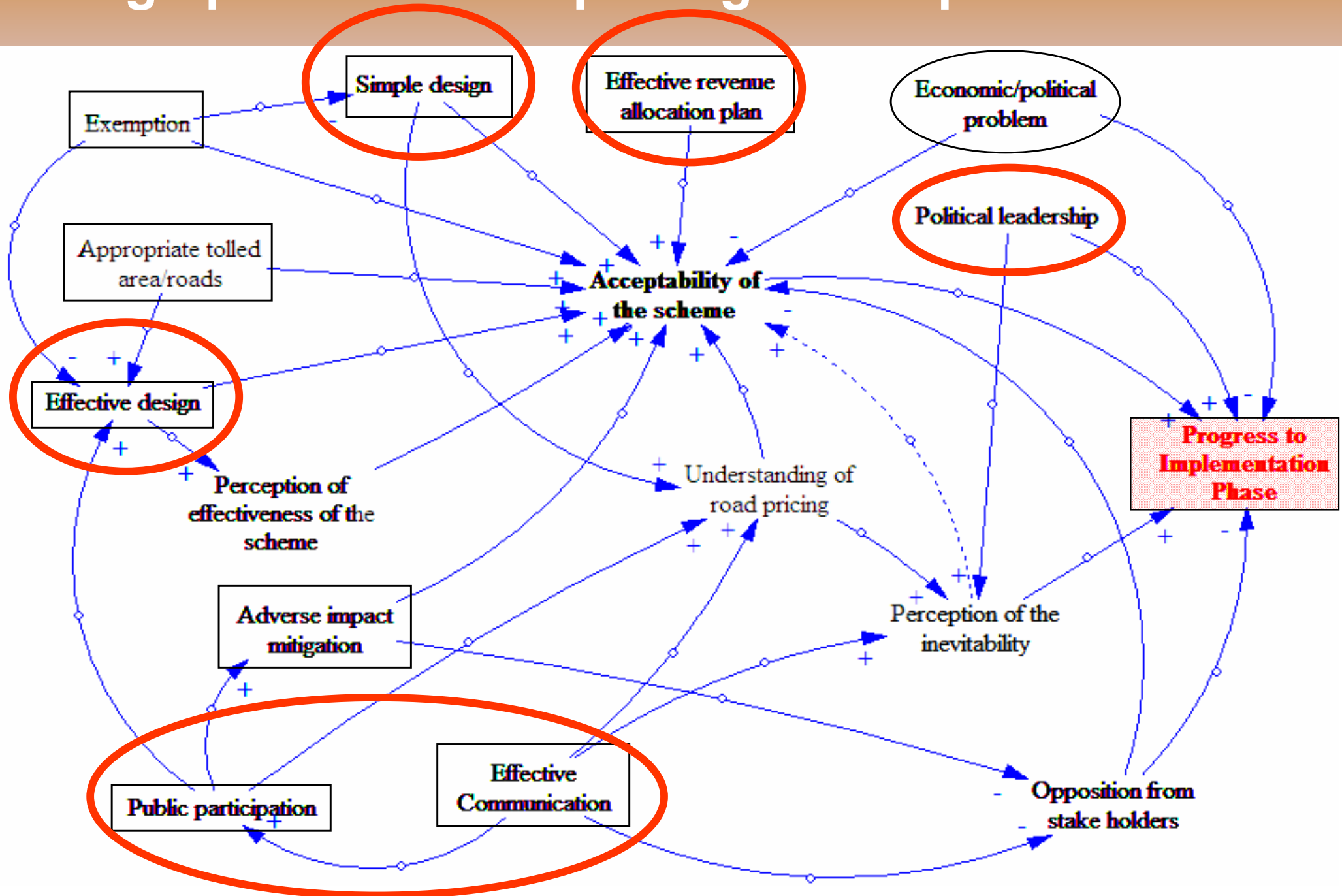
Source: ATRANS research project (Jaensirisak, Sumalee, Ongkittikul, 2007)



Initial Phase of Road Pricing Development



Design phase of road pricing development



Bangkok

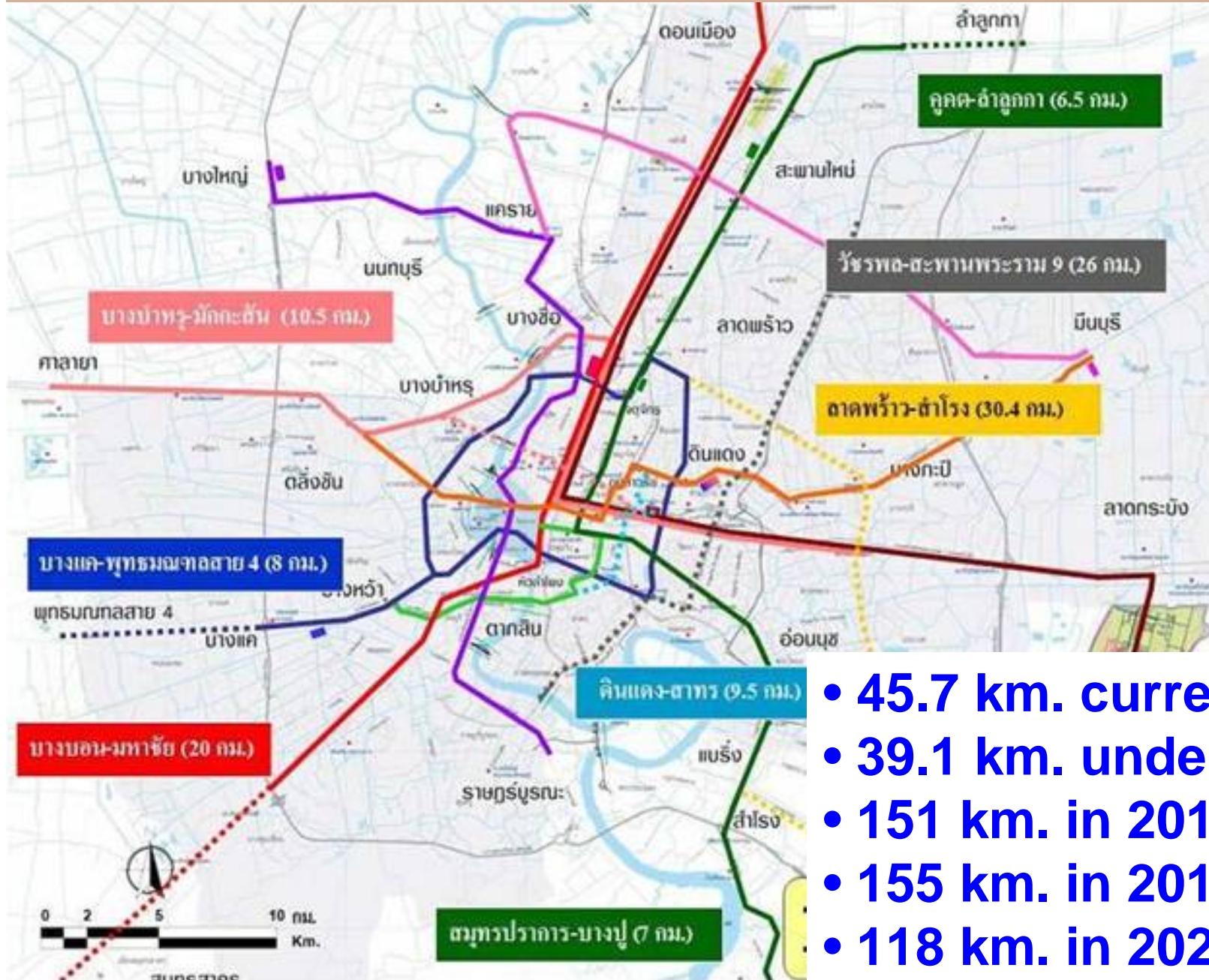


Related studies on MRT in Bangkok

- **1975 Bangkok Transportation Study (BTS)**
- 1996 Mass Rapid Transit Implementation
- 1996 Conceptual Mass Rapid Transit Implementation Master Plan Project (CMIP)
- 1998 Mass Transit Feeder System
- 2001 A Feasibility Study of the Bangkok Railroad Improvement
- **2001 Urban Rail Transportation Master Plan (URMAP)**
- 2005 The Intermodal Services Integration for the improvement of Mobility, Accessibility, Sustainability and Livelihood for Bangkok Metropolitan Region (BMR) and Surrounding Area (IMAC)
- 2004 Bangkok Mass Transit (BMT)
- **2010 Mass Rapid Transit Master Plan in Bangkok Metropolitan (M-MAP)**

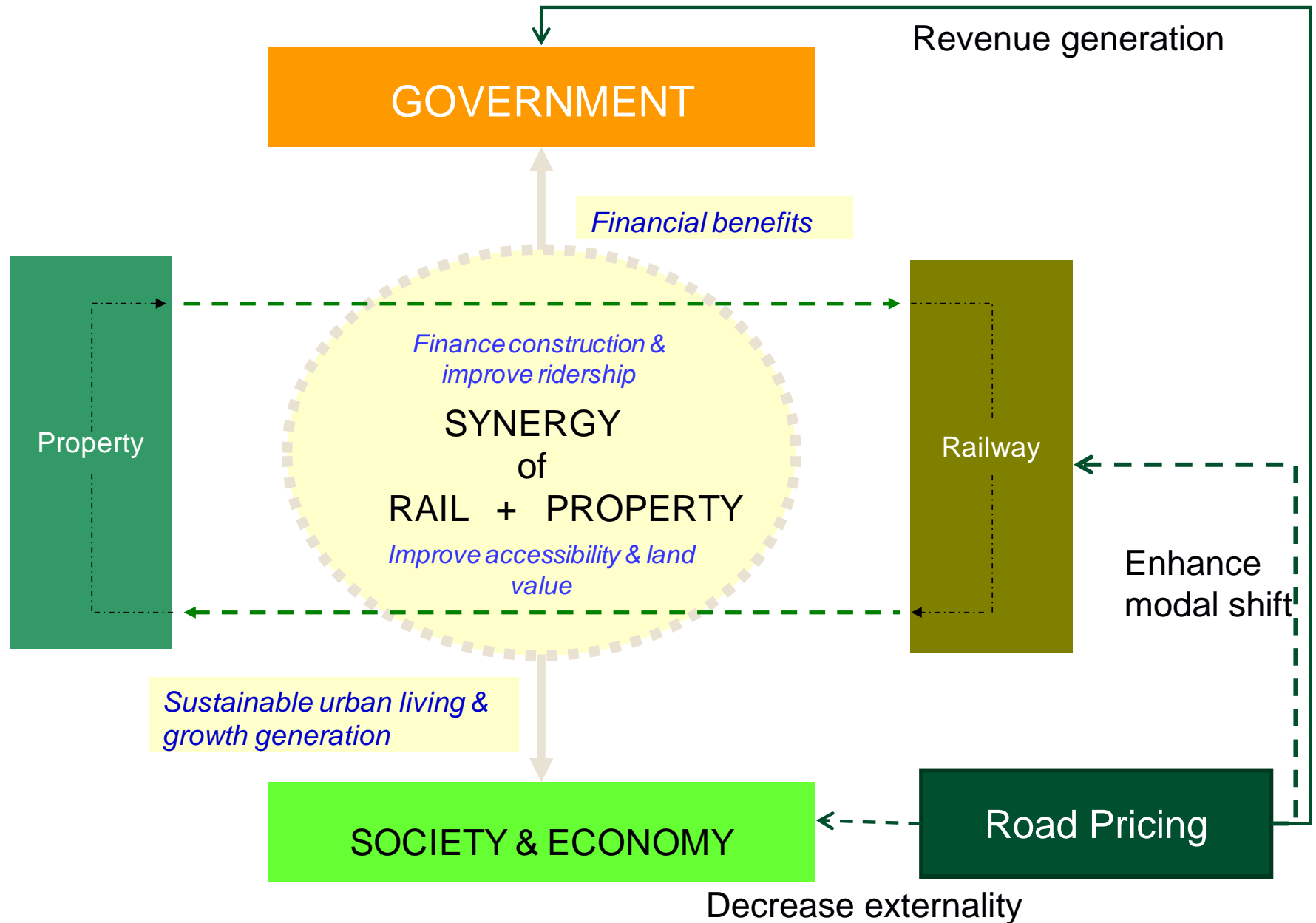
The M-MAP

12 routes 509 km. Mass transit in 2029



- 45.7 km. currently
- 39.1 km. under construction
- 151 km. in 2016
- 155 km. in 2019
- 118 km. in 2029

Example of TOD + RP benefit recovery



Road map of road pricing implementation for Thailand

1. The national government has a responsibility to develop a clear transport strategy and legislation to support the local government.
2. Road pricing should be considered as a part of the effective transport strategy.
3. An independent expert study group should be set to formulate the effective strategy.
4. Effective communication should be done continuously through a two-way dialogue to raise public awareness and knowledge.
5. Road pricing revenue allocation plan is a critical issue.
6. Implementation plan of improvement of alternative transport modes needs to be clear and convincing to the public in the early stage of planning process.
7. Political will and leadership to commit the scheme is a key success of the scheme.

Source: ATRANS research project (Jaensirisak, Sumalee, Ongkittikul, 2007)