

Road Pricing: Why, How, and When?

Dr. Agachai Sumalee

Department of Civil and Structural Engineering

Hong Kong Polytechnic University

Why road pricing?



Simple causes of congestion (1)

- From Ladpraow 8 to Imperial Queen's Park (8AM)

CAR

- Walk to car inside building (3 minutes)
- Drive through congestion (around 45-60 minutes)
- Find parking space (5-10 minutes)
- Walk to this room (5-10 minutes)
- [fuel cost probably around 30 baht]

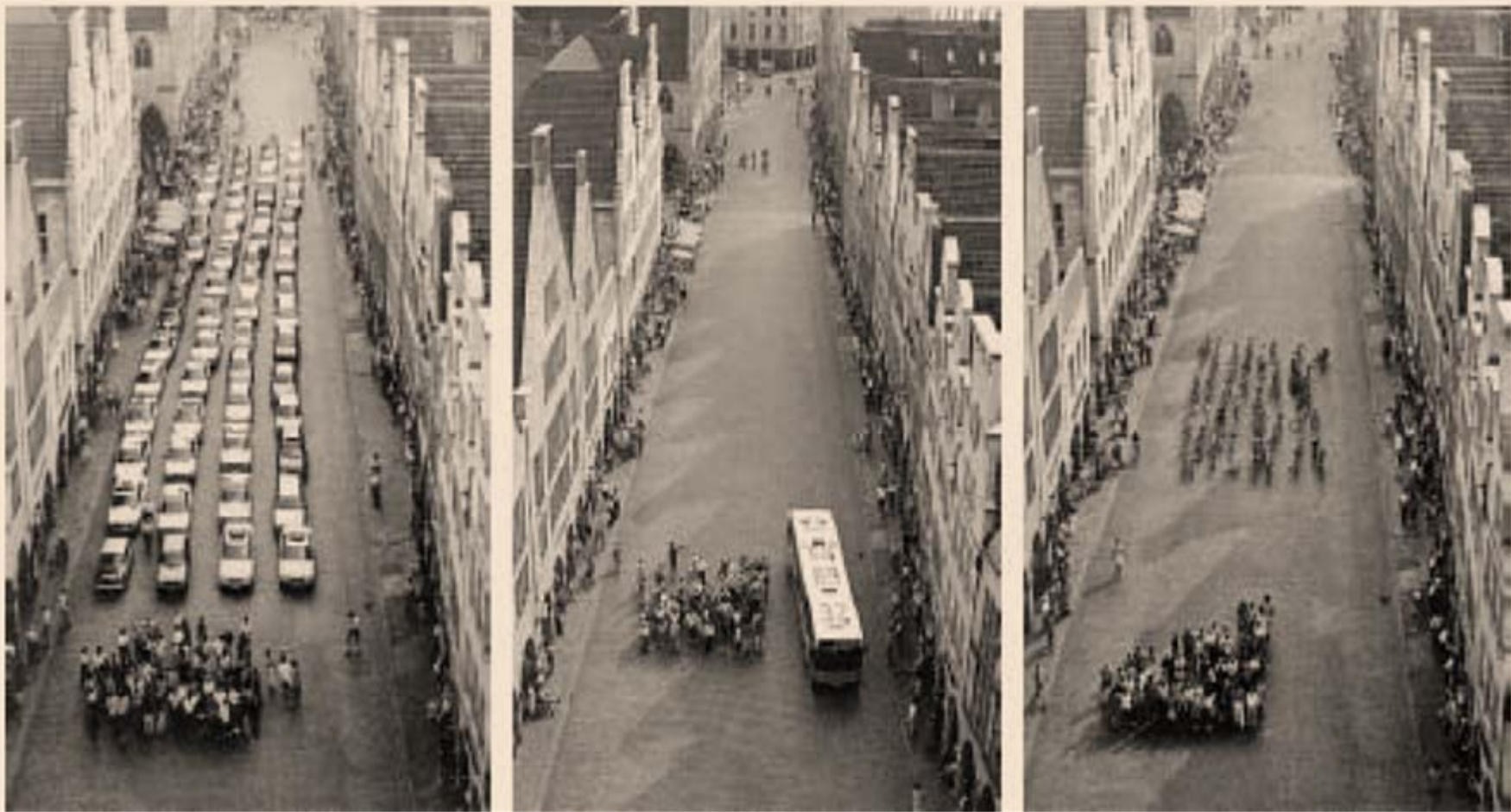
PT

- Walk to bus stop (10-12 minutes)
- Wait for bus (around 5-15 minutes)
- Bus fare (10 baht)
- Sit/Stand in bus through congestion (65-80 minutes)
- may have to transfer...
- Walk to this room from bus stop (15-20 minutes)

Simple causes of congestion (2)

- Cost of construction of road is much cheaper than PT system [quicker way to provide accessibility?]
- Transfer of operating cost/institutional management/investment cost from Government to privates
- That's why we have the congestion problem now...
- Even we try to so hard to improve the PT system, can we realistically hope that it is as convenient as Car?

How can we solve this problem?



If we can do this...

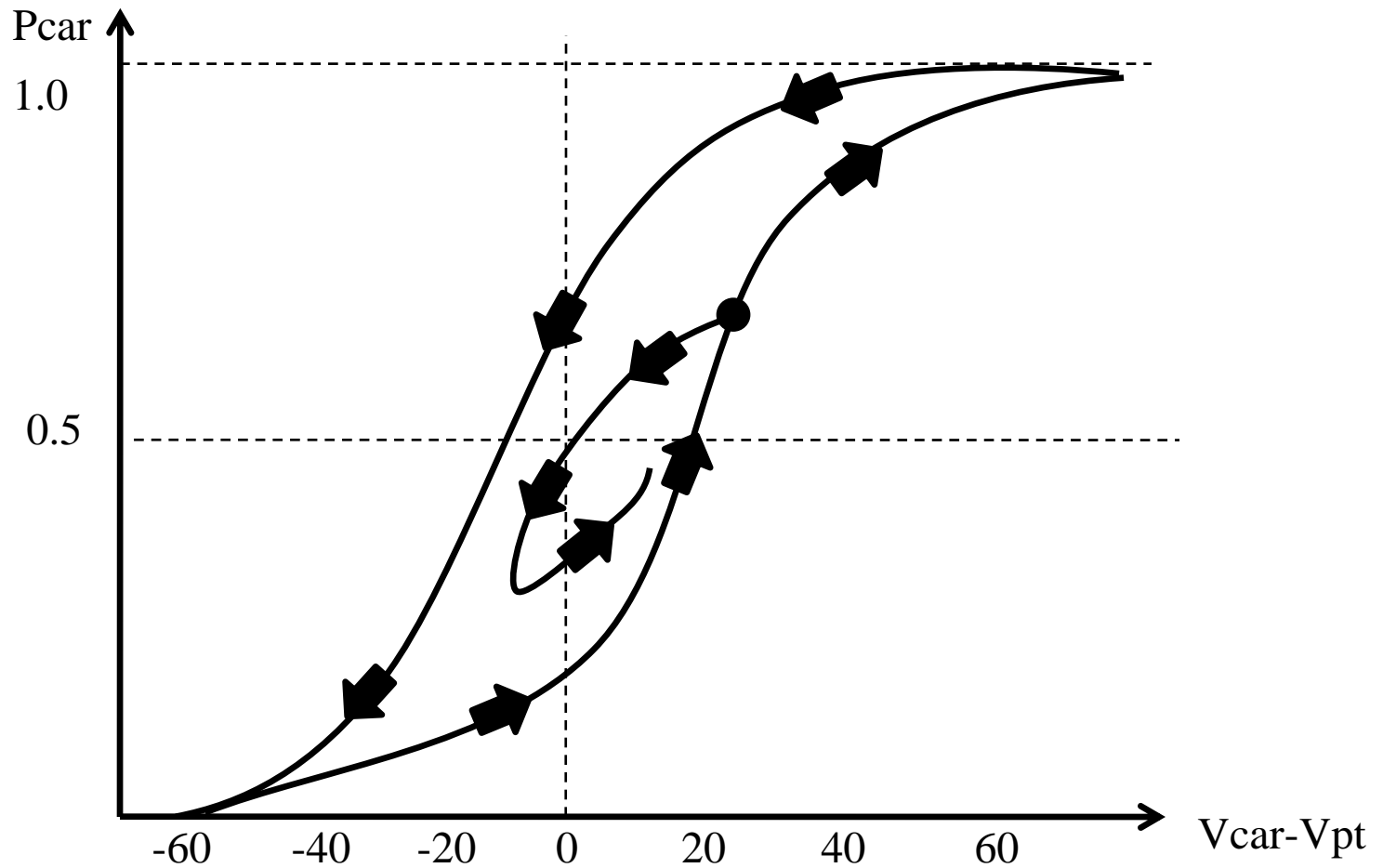


ATRANS

But...

- Car cost involves both sunk cost (which is usually misperceived) and lump-sum/up-front payment
- This causes “*economy of scale for car use*” as well as misperception of the actual cost
- Various factors which cannot be translated to money (e.g. having to walk around 15 minutes under the hot weather while carrying two bags)
- Problem with serious investment/operation of PT
- Problem of Hysteresis and Habit

Habit and Hysteresis

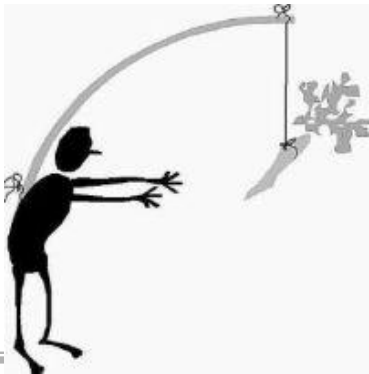


Stick&Carrot (integrated policy)

An Integration Matrix						
These instruments	Contribute to these instruments in the ways shown					
	Land use	Infrastructure	Management	Information	Attitudes	Pricing
Land use		●				●
Infrastructure	● ●		●			●
Management	● ●	● ● ●			●	● ● ●
Information	●	● ●	● ● ●		●	● ● ●
Attitudes	● ●	● ●	● ●	●		● ●
Pricing	● ●	● ● ●	● ● ●	●	●	

Key: ● Benefits reinforced ● Financial barriers reduced
 ● Political barriers reduced ● Compensation for losers

Source: DMG, PROSPECTS, EC



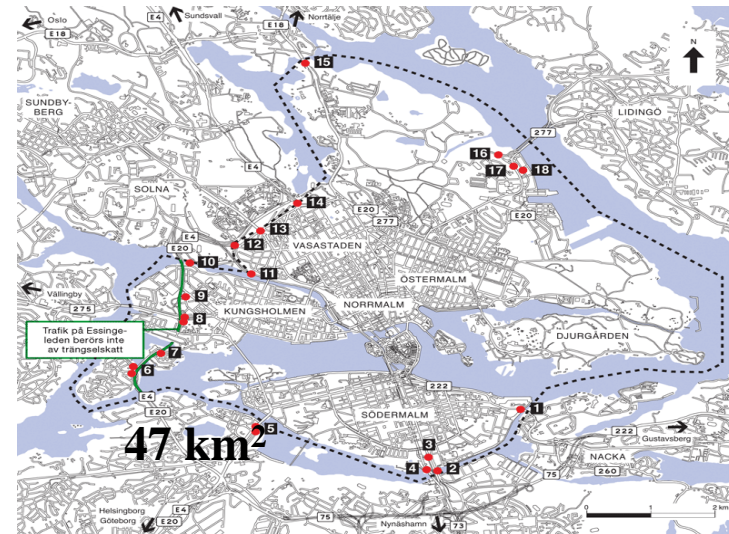
or Can Technology help?

- Better technology for automobile engine may help reducing the pollution from the congestion (e.g. noise and CO2)
- But still congestion problem will sustain
- Quality of Life will not change much from the urban planning perspective
- New type of vehicles will also require a high level of investment in both vehicles and infrastructures



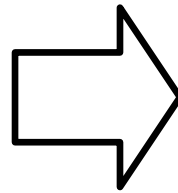
Examples of why we need road pricing

- Singapore: Prevention before cure
- London: Later is better than never
- Stockholm: Try first buy later
- Seoul: Keep things the same way



Singapore: Prevent before cure

- Interrupt the car dependency earlier (first scheme in 1970's)
- Use pricing to generate revenue for PT investment (start-up at least)
- Later on the PT system is privatized but can still survive due to ERP



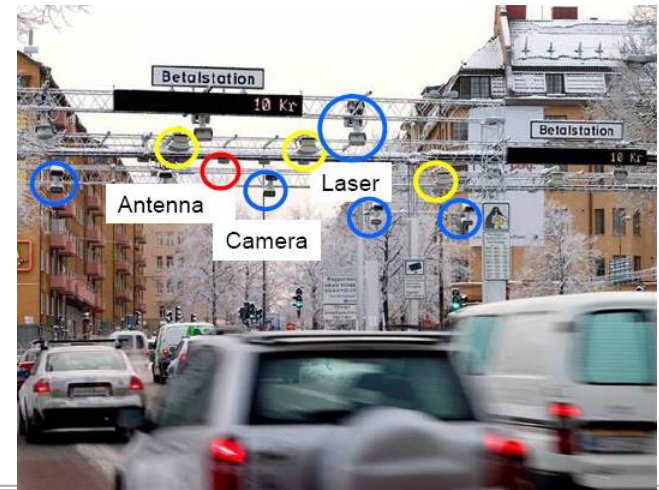
London: Later is better than never

- Extensive underground and bus network already...
- Still extensive congestion problem in the city
- 40 years from the first idea to the implementation
- Major driving forces = pollution problem & lack of success of other policies (they tried many...)

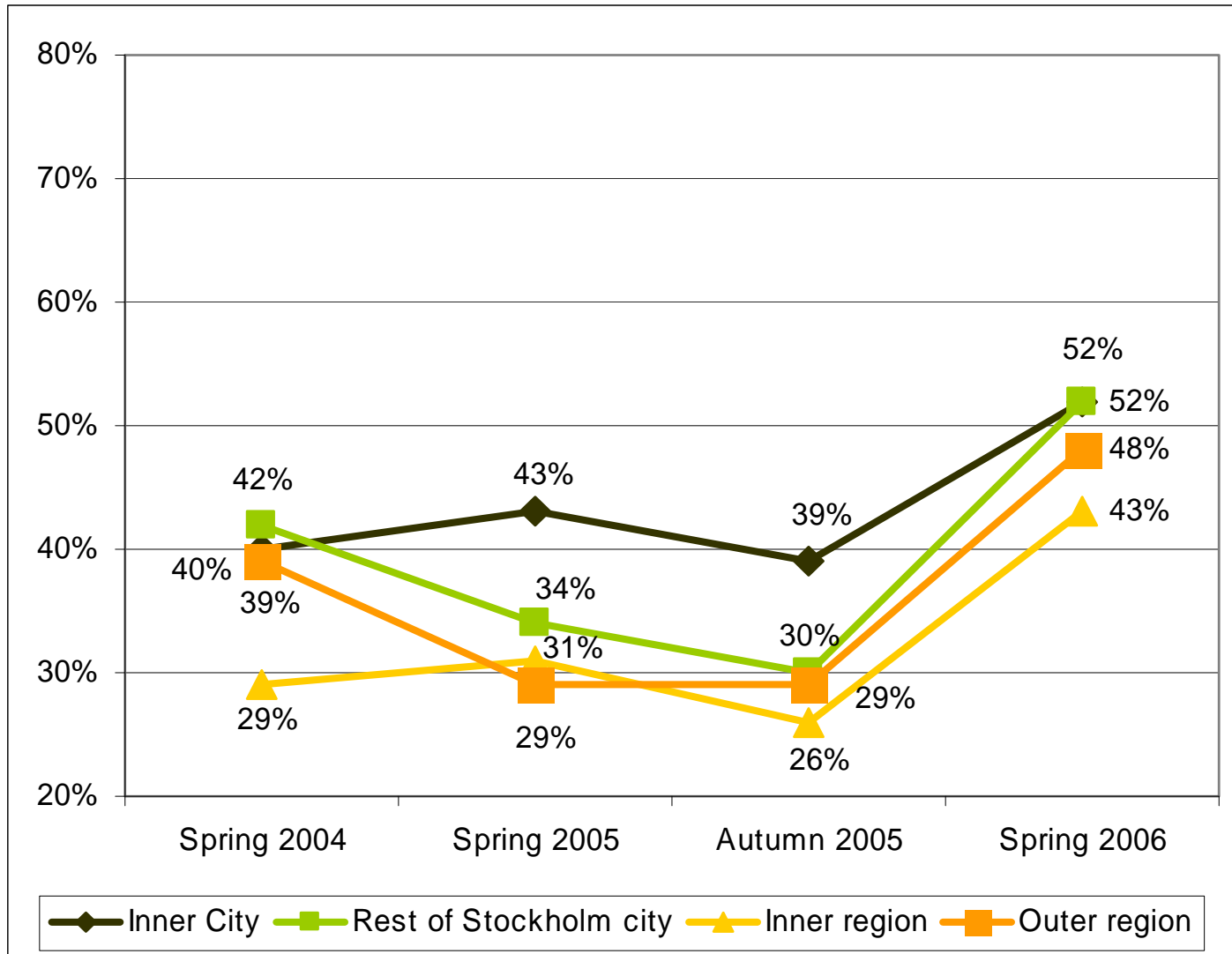


Stockholm: Try it first...

- Main reason: Environmental problem
- Good public transport networks already
- Several studies/proposals
(failed due to political issues)
- Tried between 3 Jan and 31 July 2006
- Initial opposition turned to support the scheme



Stockholm: Swing of vote



Seoul: Keep things the same

- A limited implementation of road toll on existing tolled tunnels (Namsen tunnel)
- Basically, aim to keep the traffic at the same level
- Movement to improve quality of life during that period (political leadership) after a rapid growth in economic activities



How to implement road pricing?

- Key questions to answer:
 - How to Design an effective and acceptable scheme?
 - How to handle the acceptability problem?
 - How to carry out the implementation at the right timing?
- From our ATRANS project, we tried to answer these questions using extensive case reviews and surveys



Focus on Quality of Life improvement

- The simple idea of road pricing as a tool to tackle just the congestion problem will not be sufficient
- The only case that this argument works was the Singapore case
- For London and Stockholm, it is about the “**value**” and the improvement for a better city
- Link to the concept of “**Quality of Life**”
- Project the real benefit to the public



Hong Kong case



“Canyon effect”



Cover of Time magazine
December 2004

Seoul, South Korea

In July 2002, Lee Myung-bak won an election for the mayor of Seoul, making a commitment to restore the Cheonggyecheon.



During 1967 to 1972,

- The covering road, 6.0km in total length and 50-80m in width
- Cheonggye Expressway, 5.8km in length and 16m in width



Design/Plan well: independent study/implementation group

- London's experience showed that a good well thought plan of project implementation will help relieving the pressure from stake holders and opponents
- In London case, the ROCOL study group provided the foundation plan for the Mayor
- Recognition of the technical challenge of the scheme (not just political challenge)
- Same case for the Stockholm case as compared to the failure in the Edinburgh's referendum
- At the end, the scheme must deliver the benefit!

Integrated policy

- Road pricing is the start of the solution not the solution itself
- Quality of Life can be improved in the process with the integrated policy
- Public Transport should be able to benefit from the revenue (either PPP or subsidy)
- Compensatory policy for losers



Scheme Design Issues

- Select the type of the scheme
(area, cordon, corridor, etc...)
- Select the area of the scheme
(focus on problem)
- Timing and level of charge (adjust level of utilization and avoid peak-spreading)
- Exemption scheme (compensate the losers)
- Complementary measures
(for control and traffic management)
- Legislation and institutional
(law and money issues)

Public engagement/Acceptability

- Increase of the public awareness of the long-run impact of the congestion on “quality of life”
- Education is important
- Familiarize the public with the purpose, benefit, and issue of road pricing
- Acceptance vs Acceptability
- Start from Political leadership



When is the right time for BKK?

- Economic has been slow down and fuel price has rapidly increased during a couple of years, but congestion and pollution problems are still very serious.
- Public awareness of congestion and pollution problems is high, but road pricing is still not considered as a solution by the public, mainly due to
 - fear of change in cost of living,
 - lack of alternative travel modes,
 - lack of understanding of the potential benefit
 - trust of the government (credibility) by the public is not so high

Typical arguments

- We need a good alternative (e.g. PT) before we can force people out of their cars.
- Road pricing in BKK will affect the business
- Road pricing will increase the cost of living (through increase in the cost of logistics)
- Road pricing will put more people on buses, BTS, and MRT
- Road pricing is “unfair”....

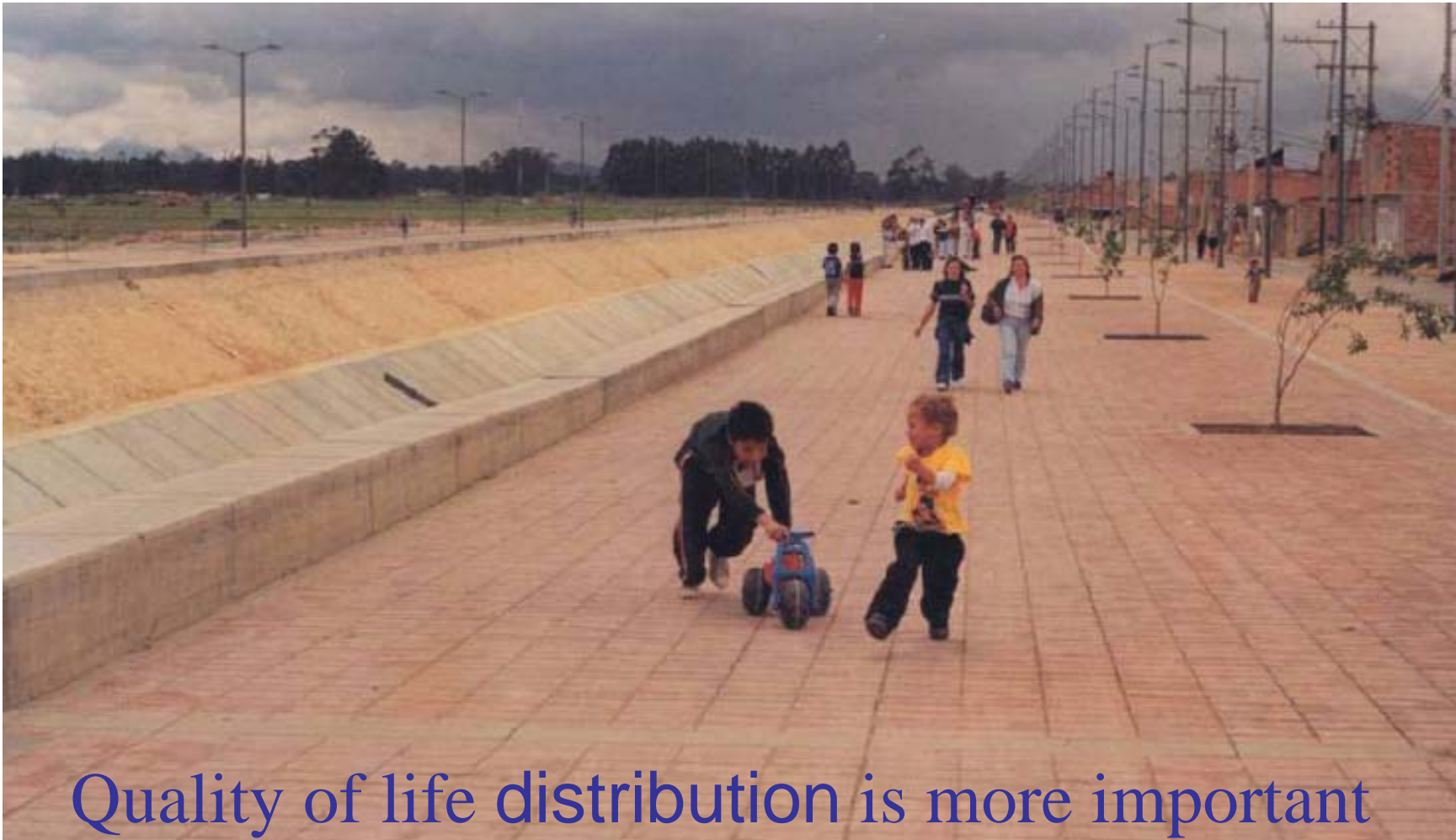
BKK case

- The current situation is already unfair.
- The main impact group will be those who do not switch to other modes already, i.e. the lower 30 percentile of the current car users.
- We aim not to stop people using their cars but rather aim to promote a more efficient use of car
- HKG case: 90% of people using PT and the business still prosper (also the same case of Singapore and London)
- Increase in freight cost can be controlled and closely monitored (this is a small part in the whole chain)
- Road pricing will give priority to PT users and revenues generated will be used to improve Quality of Life in the area

Conclusion

- Transfer of theory to practice of road pricing has reached its peak in the last decade
- We now understand more on the issues related to public acceptability
- The question is not how road pricing can tackle congestion problem but how it can improve quality of life
- Are we ready to move to a more fair and efficient transport system in Bangkok?
- BTW, even US is buying into this idea now!!!

Q&A



Quality of life distribution is more important
than income distribution