

# ***Regulatory Structure and Business Models for Bus Service Delivery in Southeast Asia***

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# ***Outline***

- **Transport profiles of cities in Southeast Asia**
  - Hong Kong, Singapore City, Kuala Lumpur, Taipei
- **History of Taipei's Transportation System**
  - Lianying (Allied Operations)
- **Regulatory and Institutional Comparison: Metropolitan New York versus Metropolitan Taipei**
  - Jurisdictional Issues
  - Customer Information
  - Fare Policy & Media
  - Fleet Assignment
  - Performance-based Subsidies
  - Transitions Between Operators
  - Attitudes Towards Service Reductions
- **Recommendations for the United States**



# Transport Profile: Hong Kong



- 427 square miles
- 7.0 million population
- Mass Transit Railway
  - includes commuter rail, light rail
  - monopoly operator
- Buses
  - 4 major franchised operators
- Ridership Bus:Rail Ratio = 1:1
- Other Transportation
  - Licensed (non-Franchised) Buses
  - Trolleys, Peak Tram
  - Taxis
  - Ferries





# Transport Profile: Hong Kong



九巴服務 日日進步

## **Kowloon Motor Bus (1933) Ltd.**

- Up to 1,000 buses per depot!
- State-of-art environmental and recycling systems in depots
- ‘Euro IV’ low-emission buses
- Profitable!



**402 routes • 4,000 buses**  
**3 million daily passengers**  
**13,000 employees**  
**US \$580 million annual revenue**  
**4 depots • Octopus AFC**  
**34,531 MDBF (in-service)**  
**101.1% peak throughput**

Lai Chi Kok Depot





# Transport Profile: Singapore



- 244 sq. miles, island nation
- 4.6 million population
- 2 franchised operators
  - SMRT
    - 2 Mass Rapid Transit lines
    - 2 light rail feeder systems
    - Bus routes
    - Taxis
  - SBS Transit
    - 1 Mass Rapid Transit Line
    - 2 light rail feeder systems
    - Bus routes
- Ridership Bus:Rail = 4:3
- Electronic Road Pricing



Photo: Steve Callas

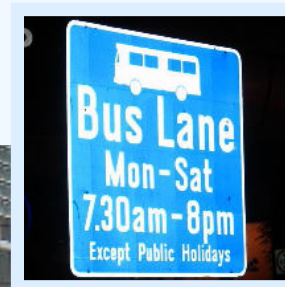


# Transport Profile: Singapore



## Singapore Bus Service **SBS Transit**

- Bus route authorities throughout Singapore
  - Merger of three large bus companies in 1973
  - 75% market share of scheduled bus services



**13 route miles • 16 stations  
(+29 light rail stations)  
2.6 million daily passengers  
2,800 buses • 7,312 employees  
265 routes in 12 route groups**





# Transport Profile: Kuala Lumpur



- 94 square miles
- 1.9 million population
  - 7.2 million in metro area
- Light rail
  - 2 independent light rail lines
  - JFK Airtrain technology
- Monorail
  - 1 driverless peplemover line
  - Seattle Monorail technology
- Commuter Rail
- Buses
  - 80% publicly operated
  - Suburban private operators
- Other Transportation
  - Motorbikes
  - Jitneys (companies closed)



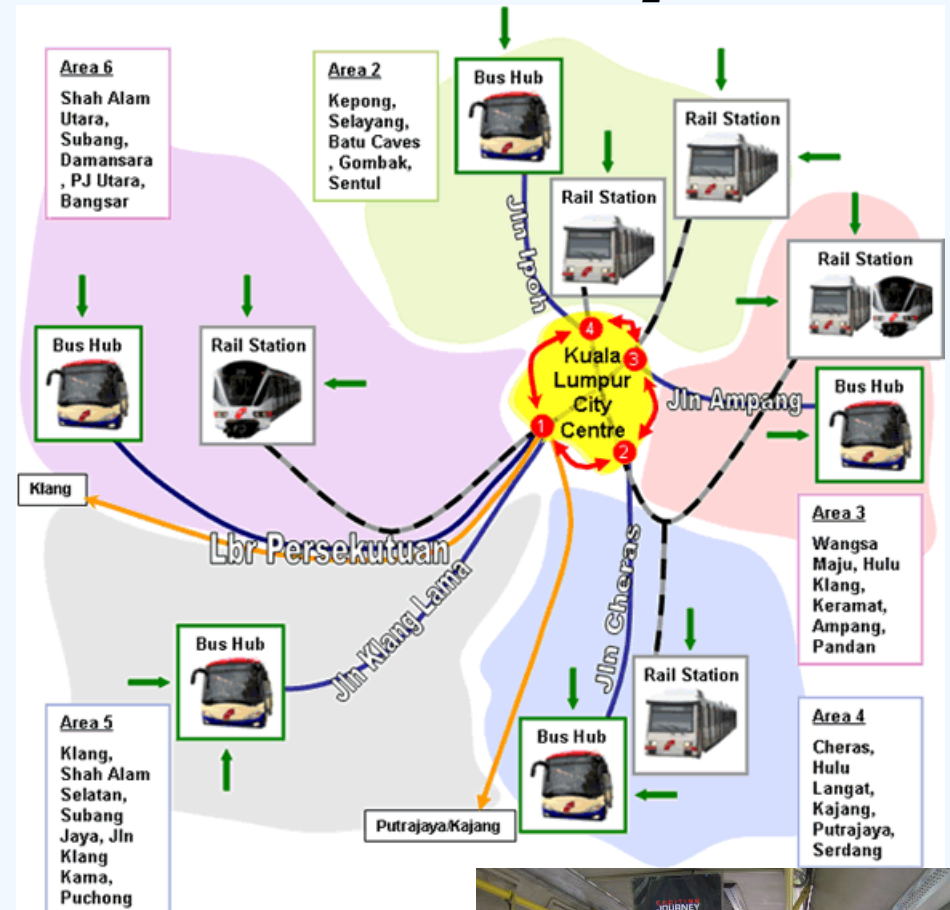


# Transport Profile: Kuala Lumpur



## The RapidKL System

- 2 radial light rail lines
  - opened 1996, 1999
  - cost US\$ 1.6 billion
- RapidKL is also bus operator
  - substantial service planning/restructuring power
- Bus has four-tier structure
  - Downtown circulator
  - Local feeder
  - Trunk line-haul
  - Direct express bus



**35 route miles • 48 stations**  
**310,000 daily passengers**  
**~150 railcars • 900 buses**  
**11 depots • 167 routes**





# Transport Profile: Taipei



- 106 square miles, 12 districts
- 2.7 million population
  - 10 million in metro area
- Tri-county “metro area”
- Mass Rapid Transit
  - Monopoly operator
  - Government investment \$20 bn
- Commuter Rail
- Regulated Buses
  - 14 major private operators: market sharing since 1976
  - Taipei city bus privatized 2004
- Bus:Rail Ridership = 4:3





# Transport Profile: Taipei



## Metropolitan Transport Co.

- Largest bus operator in Taipei City
- Taipei City Traffic Engineering Dept.
  - Provides transit priority & bus lanes
- AFC by Taipei Smart Card Co.
- Created from privatization of City Bus Administration
- Regulated by public sector



Privatized Taipei Municipal Bus



Taipei Bus Lane

**Systemwide total 300 routes**  
**15 companies • 4,000 total buses**  
**1.7 million daily passengers**

**68 MTC routes • 1,098 MTC employees**

# ***History: Taipei's Buses Before 1976***

- Fare media differ by operator
- Paper tickets were in common usage
- Non-transferable to other operators
- Routes were planned by each operator
- Limited coordination of route planning



# **Allied Operations (Lianying) 聯營**

- Established 1976
- Committee of bus companies
- Started with 5 operators
- Doubled a year later
- Today: 15 members

## **Coordinate:**

- Fare and ticketing
- Route planning & numbering
- Customer information
- Interlining, revenue sharing



# Standardizing Taipei's Operations

- Paper ticket puncher phased out (1994)
- Introduction of stored value cards (1998)
- Introduction of contactless "Tap and Go" Easy Card (2002)
- Lianying logo
  - Indicates compatible service elements amongst companies



Distance-based exurban farecard



Trip-based cityzone farecard



# Metropolitan Taipei's Lianying Routes

\* Route variants are counted as distinct routes

## Taipei Urban Lianying Routes

## New Taipei (Suburban)

## Intercounty

Operator Name	Est.
Danan 大南	1969
Shin-Shin 欣欣	1969
Chung-Shing 中興	1965
Chih-Nan 指南	1965
Tamshui 淡水	1969
Kuang-Hua 光華	1969
Keelung 基隆	1952
New Taipei 新北	1969
Capital 首都	1976
Taipei 臺北	1954
Metropolitan 大都會	2004
San-Chung 三重	1968
CitiAir 大有	1969
Hsindian 新店	1980
Southeast 東南	2002

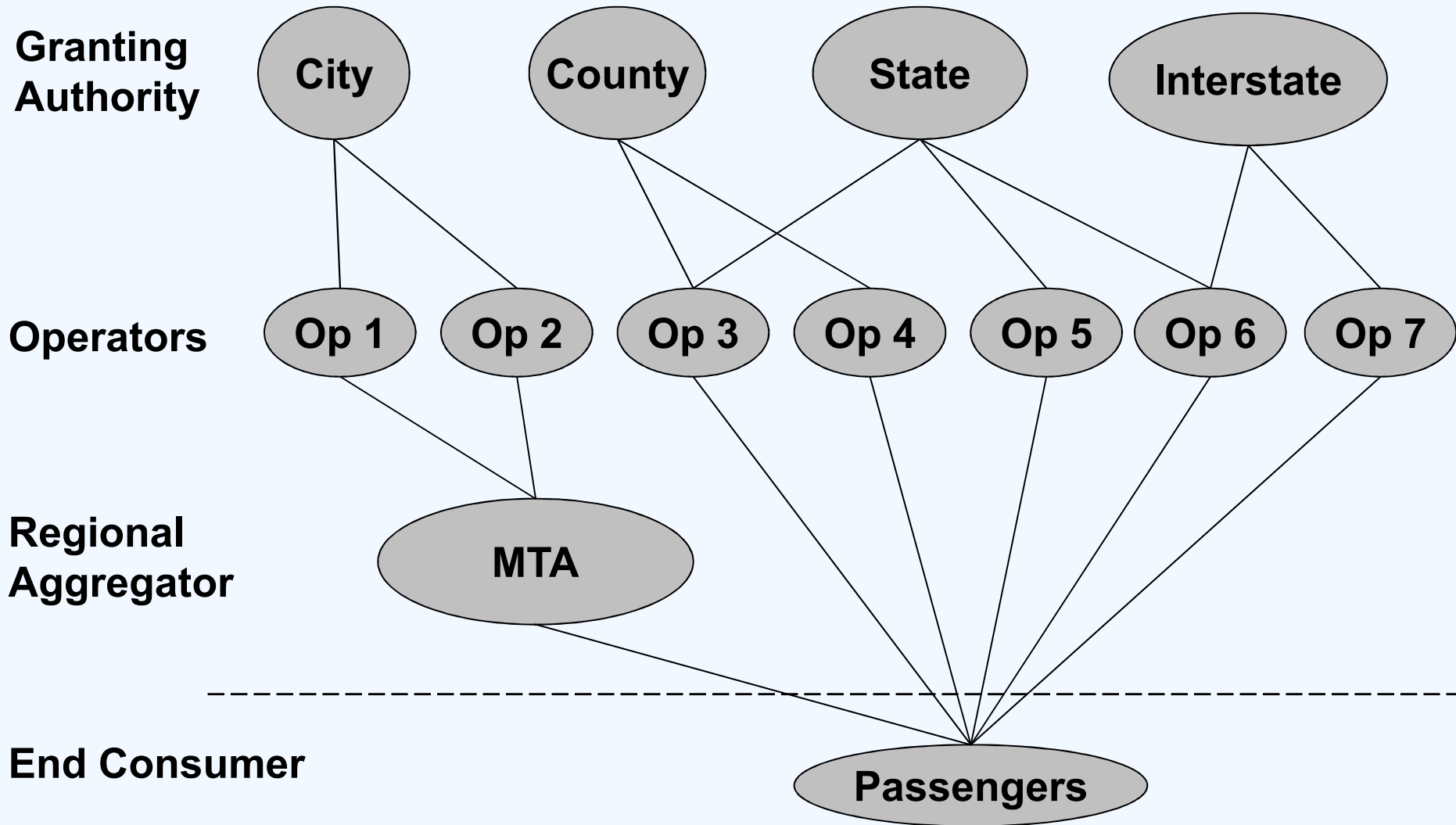
Taipei Urban Lianying Routes						New Taipei (Suburban)		Intercounty	
Reg.	Rapid	Small	Citz'n	Feed	Shtl	Reg.	Feed	Local	Exp.
21	—	10	2	4	4	1	5	—	—
36	—	—	1	11	3	1	—	—	—
20	2	—	—	3	5	4	2	2	2
21	4	—	—	—	1	11	5	8	1
2	—	—	—	—	—	21	10	3	—
22	3	—	2	6	6	1	2	—	1
—	—	—	—	—	—	10	1	11	4
3	—	—	—	—	2	3	1	2	—
30	1	7	2	13	1	9	3	—	6
22	—	—	—	2	2	39	16	4	3
49	4	7	3	3	4	1	2	—	1
32	—	7	2	3	5	11	9	6	7
8	1	—	—	1	1	—	—	—	5
9	—	—	—	—	—	5	9	—	—
11	—	11	—	7	3	—	—	—	—

# Metropolitan Comparison: N.Y. & Taipei

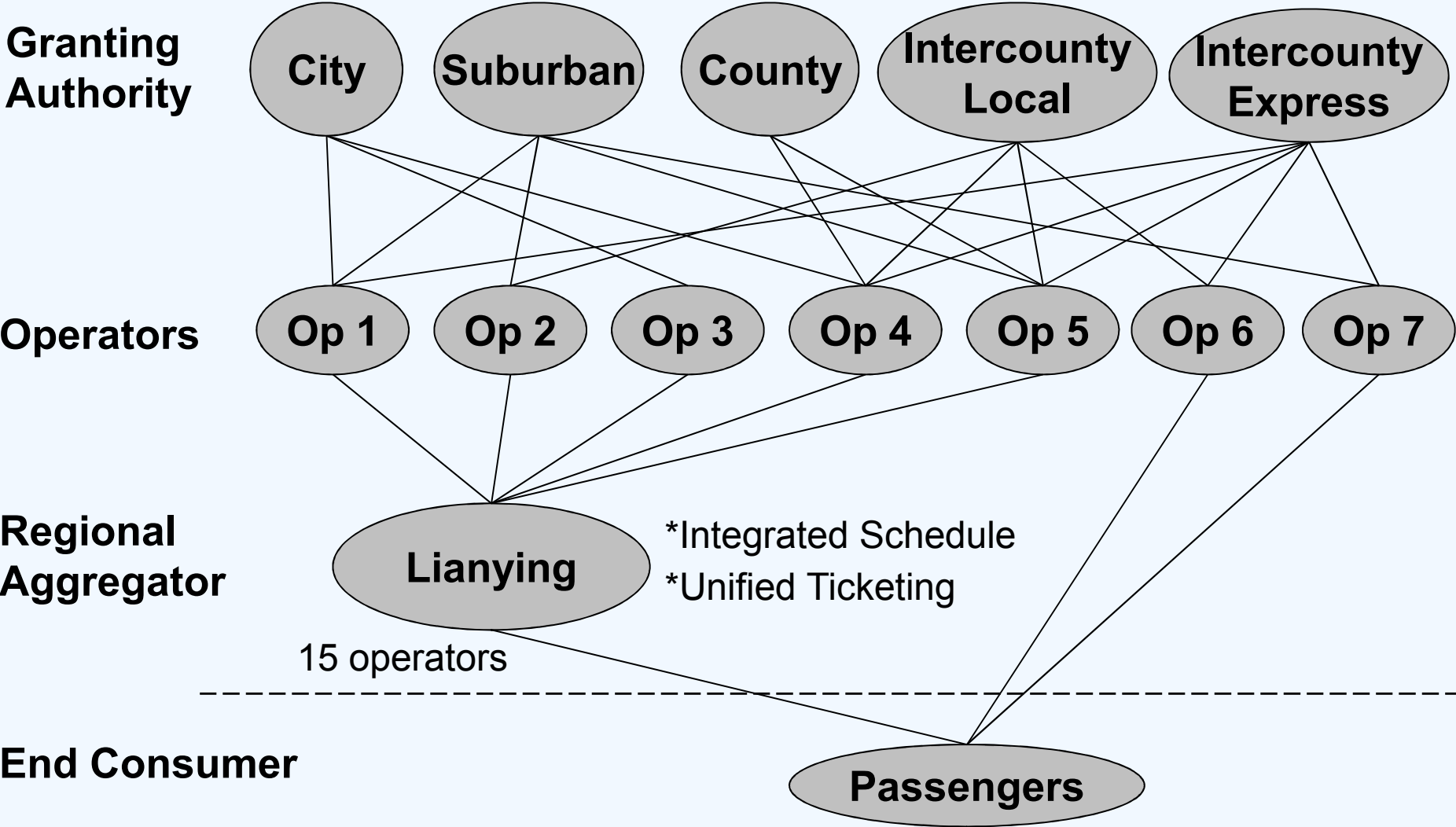
- Focus on New York & Taipei as metropolitan areas
  - Captures effects of inter-operator or cross-regional trips
- Both regions have:
  - Similar geography
  - Fairly progressive attitudes in government
  - Similar public works funding framework



# Organizational Aggregation: Metro N.Y.



# Organizations: Taipei's Lianying



# Limited Jurisdiction: Metro N.Y.

- Public operators limited to home jurisdictions (mostly)
- Exceptions:
  - **New York City Transit**
    - S89 operates to New Jersey
  - **Nassau Inter-County Express (NICE)**
    - Operates doors-closed between Nassau border and Flushing, Rockaways, Jamaica
  - **Bee-Line, NJ Transit, etc.**
    - Express and local service pick-up / drop-off only in New York City



# Flexible Jurisdictions: Taipei

- Operators obtain route authorities with multiple jurisdictions
- Just a few examples:
  - **Hsinchu/Sanchung Bus #9003**
    - Intercounty express route between Taipei and Hsinchu (exurb)
  - **Sanchung Bus #857**
    - Intercounty local route authority to operate suburb-to-suburb
  - **MTC/Shin-Shin #630**
    - Former public operator shares route with private new-start

Hsinchu Bus Route 9003

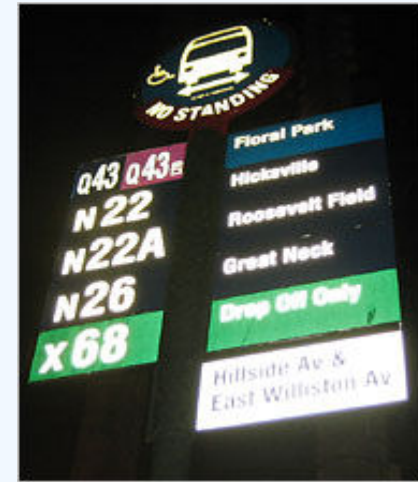


Sanchung suburb-to-suburb local route



# Customer Information: Metro N.Y.

- Integration within jurisdiction
  - Customers need to be aware of service provider
- Different policies of service
- Information not standardized
  - No metro-wide schedule site
  - Unified maps in some jurisdictions (borough-wide)
- Bus stops managed by local Departments of Transportation



# Customer Information: Taipei

- Integration throughout metro area
  - Unified bus stop information
  - Single schedule published
  - Lianying is clearinghouse
- No unified map of services
  - Companies provide individual maps
- Some operators not in Lianying
  - Exurban, intercity, and neighborhood circulators most likely to be excluded



Shilin Guandi

# Jurisdictional Fare Policies: Metro N.Y.

- Fare policies coherent within jurisdiction
- Not much fare coordination outside jurisdiction
- No universal fare media



Authority/Operator	Fare
MTA Subway and Bus	\$2.25
MTA Express Bus	\$5.50
NJT (Rail and Bus)	Distance Based
Academy/Suburban	Zone Based



# Open Fare Media: Metropolitan Taipei

- Regulated fare structures
- Three major competing fare media providers
  - Can be used in convenience stores and supermarkets
  - Not a credit card
- Simplified transfers
- Bonus point system



Example: Single zone fare

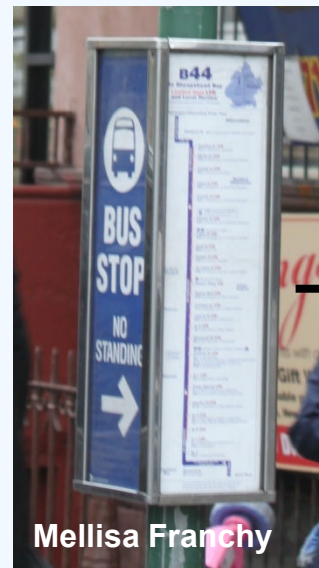
	<u>Fare Type</u>	<u>\$NT</u>	<u>\$USD</u>
Regular	Full	\$15	\$0.50
	Student	\$12	\$0.40
	Concession	\$8	\$0.27
Transfer	Full	\$8	\$0.27
	Student	\$6	\$0.20
	Concession	\$4	\$0.13

# Flexible Fleet Assignment: Metro N.Y.

- Flexible fleet (MTA)
  - Buses free to operate on any route (within depot)
- Fixed fleet (private ops.)
  - Academy Express use same bus every day
- Head sign shows destination only
- Off-board customer information at bus stops



Adam E. Moreira



Mellisa Franchy



Ned Burke

# Accountable Fleet Assignment: Taipei

- Dedicated fleet by route
- Driver and vehicle accountability
- Customer familiarity with service

## Information on window:

- Hsindian City Hall
- Metro Qizhang, Jingan Stations
- Hospital



# ***Jurisdictional Subsidies: Metro N.Y.***

- Operators subsidized on a jurisdictional basis
  - Block funds with loose mandates to provide policy service
- Little performance-based incentives
- Service levels not profit driven
- Politicians champion maintaining service
  - Cost control is a political decision



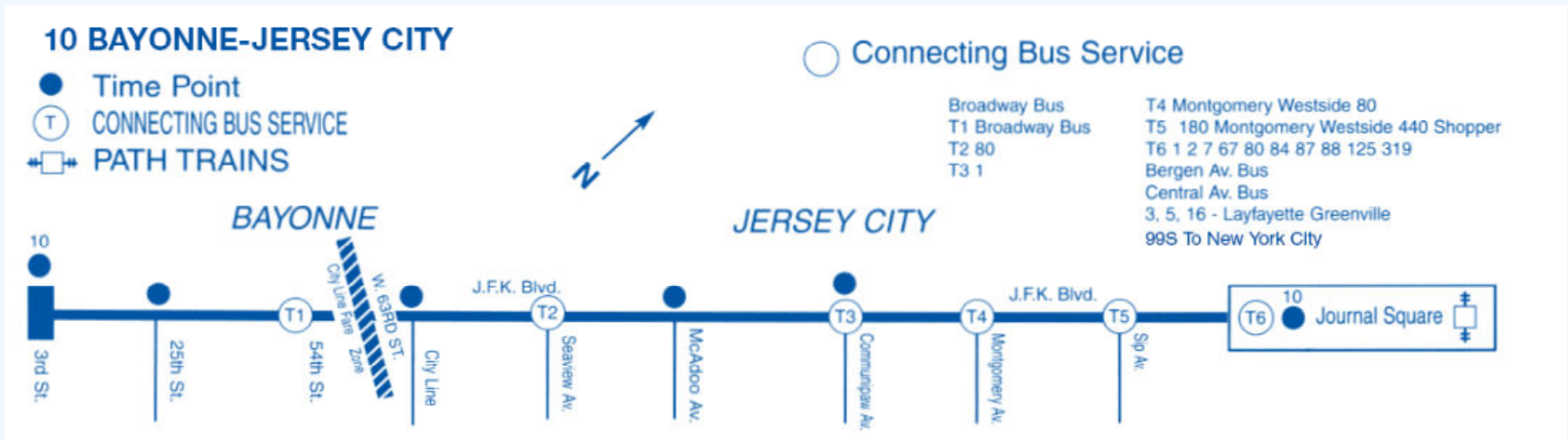
# Performance-based Subsidies: Taipei

- Operators subsidized on a performance basis
  - “Hidden” subsidies paid to for-profit carriers
  - Based on passengers or passenger-miles carried
- Many routes self-sustaining
  - Bankruptcies and discontinuations not uncommon
- Profit-making operators set service levels by route
  - Subject to regulatory approval by relevant jurisdiction



# Operator Transitions: Metro N.Y.

- Red & Tan to abandon No.10 route
  - Bayonne to Journal Sq. PATH
  - Last day April 8, 2012
  - No legal authority to compel service
- Local governments provide service funds
  - Academy is interim operator; No service interruptions
  - Bids solicited for ongoing service beginning in November



# Operator Transitions: Taipei



臺北市交通局收回大有巴士聯營307路  
並指定臺北客運臨時接駛

Taipei City Department of Transportation Confiscate CitiAir (Tayoh) Bus Co.  
Lianying Route Authority #307 and Direct Taipei Bus Co. to Provide Interim Service

**Tayou Bus operating losses and finances are worsening each day:** 2010 financial statement shows cumulative losses of more than NT\$ 1.282 billion (US\$ 42.7 million), and operators' retirement funds were not properly disbursed. This exceeds definitions of "improper management" under Highway Law Title 47, Ch.1. On November 17, 2011, Taipei City Government Department of Transportation (TCGDOT) required Tayou Bus to reduce its debt load to less than half of paid-in capital and properly settle retirement liabilities by February 24, 2012. However, Tayou Bus was unable to demonstrate effective improvement. **TCGDOT, invoking authority vested within Highway Law Title 47, Ch.1, Para,2, effective March 16, 2012, suspends The Company's vehicles from operating on Route #307, permanently revoking Route Authority.** To maintain service and schedule, based on good performance evaluation of Taipei Bus Co. during the past two years, that company is appointed interim operator and will support Route 307 on a temporary basis for three months. Peak frequency will be every 2-3 mins, off-peak 3-5 mins, and holiday 5-8 mins; the public will not be affected. TCGDOT states, route is temporarily assigned to Taipei Bus Co. and in future will be opened for bidding for long-term route authorization, continuing high quality service.

<http://www.dot.taipei.gov.tw/ct.asp?xItem=20382346&ctNode=12308&mp=117001>

# Service Reductions: Metro N.Y.

State Assemblyman... quest to have the MTA restore some or much of the Co-op City bus service cuts...

*“Why change something that has worked for some 40 years?”*

## Bx28 riders say cuts are hurting service

(04/19/11) CO-OP CITY - Co-op residents say cuts to the MTA are leaving them waiting and frustrated at bus stops.

Riders say the average wait for the Bx28 bus is close to 45 minutes, while others say are unsure if the bus will arrive at their stop at times because no weekday evening schedule has been posted.

19/2

Co-op City Times / March 26, 2011

## Benedetto invites MTA Chairman to tour Co-op City

**BY BILL STUTTG**

After nearly nine months of meetings, surveys, petitions and protests, State Assemblyman Mike Benedetto has decided to change strategy and go right to the top in his quest to have the MTA restore some or much of the Co-op City bus service cut by the agency last year.

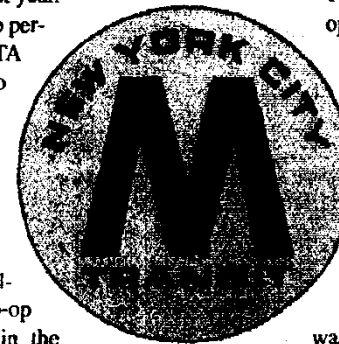
This week, Benedetto personally invited MTA Chairman Jay Walder to come to the community in the near future and join him and City Council Transportation Chairman James Vacca in touring the community and surveying the quality of the bus service Co-op City residents receive in the wake of last summer's cuts.

In a letter of invitation sent to the Chairman on Tuesday, March 22, Benedetto stated: "When changes were made to the Co-op City service routes last June, we were all upset. 'Why change

something that works and has worked for some 40 years?' was the question on the lips of all the residents. Over the past eight months, Co-op City has lived with the changes and with the 'tinkering' made to the new routes and the opinion of all is: they just don't work.

"I invite you to come to Co-op City. Let me introduce you to the fine people who live there and see for yourself the difficulties they have faced since last June. I think when you do, you will realize, as I do, that these changes don't work and that we should return to what was"

Benedetto, who has made several attempts to try to get the MTA to reconsider the cuts to Co-op City's bus service over the past eight months, told the



(Continued on page 5)

# Service Reductions: Metropolitan Taipei



每班載不到2人, 2市民小巴恐停駛

2009年10月25日

【蔡亞樺／台北報導】

***Every Trip Carries Two Passengers on Average, Two Small Routes May Face Abandonment***

*“Taipei now has ten Citizen’s Bus routes. Loads are low, particularly on routes S-3 to Yang Ming Mountain Community and S-9 to Riverside Park. The routes averages no more than two passengers per trip. Taipei City Hall subsidize every trip by more than NT\$200 (about US\$6.70). **Citizens complained that it was a total waste of money**, and City Councilor even made fun of it as **‘mosquito bus’**. Taipei City Public Transport Department is planning to make route rationalizations; if loads do not improve, routes will be abandoned.”*

# ***Recommendations for the U.S.***

1. Jurisdictional issues can be hidden from riders through multi-jurisdictional operators
2. Multiple operators provide diversified transit labor marketplace
3. Fare media & customer information should be consistent throughout metro area, not just city
4. Performance-based subsidies focus efforts on matching supply to demand
5. Metro-wide planning and operations clearinghouse is beneficial for integration

# Questions?

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