Taipei Mass Transit System

December 1st, 2010
Taipei Mass Transit System

- MRT System
- Bus System
- High Speed Rail
- Intermodal Station
- ITS Application
Taipei Mass Transit System
The City of Taipei

- Area - 105 sq mi
- Population - 2.6 million in City, 6.8 million in Metro
- Density - 24,800 p/sq mi (SF=15,600 p/sq mi)

Transportation Modes -
- High Speed Rail
- Subway - 9 lines
- LRT - 1 line
- Bus - more than 300 routes
Taipei Metro Rapid Transit (MRT)

- Began Service in 1996 (elevated LRT). First subway began service in 1997
- Number of Lines: 9 (8 subways, 1 LRT), 7 under construction (5 new lines, 2 extension). More are under study
- Number of Stations: 93
- Total Operational Distance: 100.8km or 63mi (BART 104 mi). Total 169 miles
- Ridership: 1.4 million/day in 2010 (BART 330,000/day)
Taipei Rapid Transit Corporation

- A public/private corporation with a Board of Directors
- The Chairman and the President are appointed by the Mayor. Only Senior Managers are civil service employees
- Mandate to provide public transit services and be profitable
- 8-10% profit annually
Taipei Rapid Transit Corporation

- Taipei Rapid Transit Corporation is a public/private partnership company:
  - Taipei City Government (73.75%)
  - Ministry of Transportation and Communications (17.14%)
  - Taipei County Government (8.75%)
  - Tang Eng Iron Works Co. Ltd., Taipei Fubon Bank, Mega International Commercial Bank and Taiwan Cooperative Bank (0.36%)
我們的長官

副總經理
Vice President

董事長
Chairman

總經理
President

副總經理
Vice President

高運量行控中心組織架構
Organization Chart of High Capacity System Operations Control Center

主任
Manager

副主任
Deputy Manager

主任控制員
Chief Controller

路線控制員
Line Controller

列車控制員
Train Controller

電力控制員
Power Controller

資訊助理
Information Assistant

淡水線
Dawshih Line

新店線
New Taipei Line

南港、板橋、土城線
Nangang Line / Banqiao Line / Tucheng Line

中和線
Zhonghe Line

正工程師
Engineer

時程小組
Job Dispatching Team

行政小組
Administration Team
Taipei Mass Transit System
Taipei MRT - LRT

- 1 line all elevated, rubber tires
- Train set: 2 unit EMU sets, total of 4 cars
- Max Speed: 80 km/hr (50 mph)
- Car Capacity: 105-107 passengers (20 seats)
- Total Capacity: 428 passengers/train
- Dwell Time:
  - 20-30 seconds for most of stations
  - 40-50 seconds at Zhongxiao Fuxing Station
Taipei MRT - Subway

- Both elevated and underground
- Train set: total of 6 cars
- Max Speed: 80km/hr (50 mph)
- Car Capacity: 320 passengers (58 seats)
- Total Capacity: 1,936 passengers
- Dwell Time
  - 18-35 seconds for most of stations
  - 40-50 seconds at Taipei Main Station and Zhongxiao Fuxing Station
MRT Fare Structure

- Fare Structure - Zone Structure
  - 65 ¢ to $2
  - Single ride vs. one day pass ($6.25 unlimited)

- EastCard (20% off; 25¢ discount while transferring between bus and MRT)
MRT Fare - By Zone
忠孝敦化站 → 市政府站
Waiting Line
Taipei Bus System

• Before 1976 - both by the City Bus Administration and 15 major private bus companies with different fare structure and tickets.
• Now jointly operated by 16 individual bus transit agencies, sharing the same fare structure, ticketing process, and route numbering, administered by the Taipei DOT.
• There are 14 Bus Transportation Co., Ltd. in total, with more than 300 routes now
• Extensive BRT system
Taipei Bus System

• Payment system - Easy Card
• Ticket - Zone system
• Ticket price - 50¢/journey, student 40¢
• Transfers - 25¢ if transfer is within 1 hour
Taipei Bus System

- Begin with 0 - to Taipei Main Station
- 2 digits - One zone
- 3 digits
  - Begin with 1 - Major tourist spots
  - Begin with 2 - Two zone
  - Begin with 3 - Three zone
  - Begin with 5 - Originally, one zone with A/C
  - Begin with 6 - Originally, two zone with A/C
  - Begin with 7 - Short distance intercity bus
  - Begin with 8 - Taipei County bus
  - Begin with 9 - Express bus
  - Named with color - MRT shuttle bus
Taipei BRT/Bus Lane

• First bus lane started in 1989 – both with flow and Contraflow bus lanes in a major east west boulevard. Controversial, but very successful
• Mostly center running with near-side side platforms
• Recent conversion to far-side platform to take advantage of signal priority system
• Benefits
  – speed increased 30-40%
  – During peak hour, 6,000 passengers per direction per hour (triple the capacity of a mixed traffic lane)
BRT Bus Stop
BRT Bus Stop
Intermodalism and Land Use Integration

- Seamless connection between MRT and buses and MRT/Railroad/HSR - physical, fare, ticketing
- Underground pedestrian shopping streets connecting with surrounding buildings
- Adjacent high density development, incentives for housing near MRT stations
Intermodalism and Land Use Integration
Taipei Bus Terminal

- Location - Immediately to the west of Taipei Main Railroad Terminal
- Pedestrian access - underground passage way from the main Railroad Terminal and ground access
- Bus Access - Direct access to an elevated expressway
- Number of floors - 3
- Number of stalls - 16/floor. Total 48 stalls
- Bus companies - 9 companies
- Average more than 2,000 buses per day
Bus Terminal Connects to Shopping Center
Taipei Bus Terminal

Taipei Mass Transit System
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Taipei Mass Transit System

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Taiwan High Speed Rail System

- BOT Project - 35 Year agreement
- Total cost - NT$460 billion ($14.5 billion)
- Top speed - 300 km/hr (187.5 mph)
- Total distance - 345 km (215 mi)
- Number of stations - 8 stations
- Open - year 2007
- Annual Ridership - more than 30 million people
Transit ITS Application

- Real Time Arrival Information
- Web based schedule and arrival time - computer and cell phone
Bus Stops and Real Time Messaging
Bus Stops and Real Time Messaging
Bus Online Real Time Information

Taipei Mass Transit System
EasyCard

- Private company formed in 2000
- Shareholders
  - Taipei City Government (40%)
  - Bus Service (25%)
  - Banks (15%), Construction and other (20%)
EasyCard

- Easy Card can be used for
  - All transit modes (except HSR), Taiwan Railway
  - Intercity bus, and taxi
  - Parking, public bicycle rental
  - Taipei Zoo and Library
  - Designated stores (i.e. convenient stores, pizza hut, dunkin donut, and so on)
END

Questions and Answers