Policies on Public Transport Development and Financial Schemes in Taipei

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Agenda

• Background Information
• Integrated Transport Policy
• Taipei Metro and Bus Systems
• Full Trip Cost and Implications
• National Policy and Programs
• Concluding Remarks
Taiwan and Taipei Metropolitan

- **Taiwan**: 36,000 sq km, Pop 23.2 mi
  - Car - 7.1 mi, Motorcycle - 13.8 mi
- **Taipei Metropolitan**: 3,000 sq km, Pop 7.0 mi, Car - 2.5 m, Motorcycle - 3.2 mi
  - MRT 136 km + BRT 60 km
  - Public Bike: 36,800 bikes w/ 820 stns
- **PPP Transport Projects**: (1) HSR - 15 Bi; (2) Kaohsiung Metro - 6 Bi; (3) ETC System - 300 mi; (4) City Bus Station - 200 mi; (5) Public Bike - 40 mi; (6) Smart Card System - 30 mi
- **Freeway Network**: 1,000 Km
  - MLFF ETC w/ distance-based charge
- **High Speed Rail**: the journey b/w Taipei and Kaohsiung (345km) **90** minutes.
Our Cities and Challenges

• High Motorization
• Diversity of Land Use
• High Density of Population
• Mixed Traffic Flow Characteristics
• High Fatality in Traffic Accidents
• Enforcement vs. Efficiency
• Reforms being proposed: Low Carbon City, Green Mobility, Public Transport, Public Bike, Walk......
Integrated Urban Transport Policy

- Sustainable Development (Environmental, Social, Economic/Financial and Governance)
- Integration of Land Use/Development and Transportation Planning
- Excellent Public Transport Services
- Friendly Environment for Active Mobility - Walk and Cycling
- Safe & Integrated Expressway and Road Network
- Efficient Transport Demand Management
Integration of BBMW: Bike+ Bus+ Metro+ Walk

- Integration of Bike, Bus, Metro, and Walk through land use, urban planning, urban design and ICT

Green Mobility
Taipei Transport Policy: Safe, Green, Smart and Shared for Green Mobility from 55% to 70% by 2025
Smart Sharing Systems of Bike, Scooter / Car

- YouBike
  - Source: Zipcar
  - Priority: Poor MRT coverage area and parking supply shortage districts
  - Electric motorcycles
  - gogoro and WeMo

- U-Motor
- U-Car
  - Coordinate with car purchasing limitation and public housing
  - Rental stations at public housing and public parking lots
  - Electric vehicles/ Personal Mobility Devices

- source: Zipcar
- source: car2go
Taipei Metro

- Five Lines: 136 KM/ 110 Stn
- Investment: 20 Bi
- Passengers: 2.2 Mi/Day
- Planning & Construction
  - MOTC
  - Taipei Dept of Transportation
  - Dept of Rapid Transit System
- Operation
  - Taipei Metro Corp
- New Lines: 120 KM (15+ yrs)
- AA and Tramway Policy: MC vs. MR & MB
- Financial Schemes
  - TOD + TIF (MRTOD, LRTOD, BRTOD)
  - Replacement Fund
Taipei Metro
More on Financial Scheme

- **Investment**: 20 Bi
- **Shareholders**:
  - Taipei City Govt
  - Ministry of Transport & Comm
  - New Taipei City Govt
- **Taipei Metro** for Operation
  - 1996~2000 NT$ 1.00 per Year
  - 2001~2030 4% of Total Revenue (Replacement Fund)
  - 20% TR from non-Transport Sectors
  - Total Profit: 15Mi~ 25mi /Year (2012~17)
  - New Lines: Taipei Metro pays 25% of Investment (self-liquidation Rate)
- **Pricing & Fare**
  - Cost and Fare Assessment Committee
  - Zonal Fare: $0.6 <5km; $0.8 for 5~8km; $1.0 for 8~11km...; $2.0 for 27~31km...
  - 80% for using EasyCard
Airport Link and Taoyuan Metro
Taipei Bus System

- Bus Companies: 16 Corp/ 4,200 Veh
- Routes: 320
- Pre-BRT: 60 KM
- Passengers: 1.8 Mi/Day
- Public Transport Authority/Bus Committee
  - Network Planning/ Terminals/ APTS
  - Route Concession (5 yr)
  - Performance Evaluation (6 month)
  - Pricing/ Fare Assessment (2 yr)
  - Subsidy Evaluation (160 Mi/yr)
- Feeder Bus to/from Metro
  - 50% Discount (with Metro Fund)
- Services for Handicapped and Seniors (350 Vans + 350 Taxi)
- Trials for Demand Responsive Transit System
Integration for Seamless Services

- Land Use, Urban Design and Transport Planning
- Network and Terminal
- Operation
- Last Mile & First Mile
- Ticketing and Pricing
- Information
- Institution
Smart Card & Multi-Media Payment System

- Ferry
- Urban Rail w/ Mobile Phone
- Curb Parking
- Off-street Parking
- Bus
- Taxi
- Railways
- Cable Car
- + Security + e purse
EasyCard Corp: PPP Project

- **Public Sector 48%**
  - Taipei Metro 28%
  - Taipei Bus Adm 7.5%
  - Taipei Parking Adm 7.5%
  - Taipei Bank 5%

- **Private Sector 52%**
  - Bus Companies 27%
  - System Integrator 25% (open bid)

**Advantages of PPP:** Private Fund; Marketing/Promotion; Flexibility for New Technologies
Re-Allocation of Road Space for Green Mobility in MRT Corridor
More sidewalks and bike tracks in the MRT Corridor

YouBike Station

Sidewalks + Bike Tracks
Re-Allocation of Road Space on Streets with 40 m: 192 km+ Bike Tracks
Promotion: Mayors and Stakeholders
Re-Allocation of Road Space for Active Mobility in Local Street & Alley
Multimodal Terminal Development

- City-Bus + Intercity-Bus
- MRT + Taxi + Bike + Walk + Parking
- Office + Shopping Mall + Hotel
- Transit-Oriented Development
- Reasonable Rent for Bus Corp
- PPP Projects
Full Trip Cost Study and Social Sustainability

Measure: Actually Paid / Should Pay (%)
usage, facility, time, external cost (Pollution, Congestion, Safety...)

Walk: 100
Bike: 96.6
M/C: 34.8
Car: 59.6
Taxi: 47.8
Bus: 81.6
Metro: 89.7

Car and motorcycle users are heavily subsidized by social resources.

BIG Challenges: Energy, Climate Change, Public Health, Safety, ……
ICT/ ITS for Smart and Sustainable Mobility
Mobility as a Service, MaaS
Better Choice......

• $28.88 = Bus + Metro + Public Bike
• $58.88 = Bus + Metro + Public Bike + 66 km Taxi
• $78.88 = Bus + Metro + Public Bike + 66 km Taxi + 88 km e-ScooterSharing
• $108.88 = Bus + Metro + Public Bike + 88 km Taxi + 88 km e-ScooterSharing + 88km CarSharing
• $138.88 = Bus + Metro + Public Bike + 88 km Taxi + 88 km e-ScooterSharing + 88 km CarSharing + 4 High Speed Rail Travels
National Policy & Programs

- **Electric Vehicles**: City Bus (2030); Motorcycle (2035); Car (2040)
- **National Bus Transit Program**: Low Floor Bus; GPS Bus; Passenger Information System; Bus Terminal; Smart Station; Smart Card Ticketing System; First & Last Mile Service; DRTS
- **Foresight Railway Program**: Integration of High Speed Rail and Conventional Rail; Urban Metro; Tourism Rail
- **National ITS and Smart City Plans**: Bus Safety; Rural and Remote Areas; MaaS; Driverless Shuttle; ACE Institute
- **Environment Law/ Regulation**: Low Emission Zone; Car and Motorcycle Emission Regulation
Concluding Remarks

• Integrated Transport Policy and Excellent Public Transport Services

• Sustainably Financial Schemes for Public Transport: (1) PPP Strategies; (2) Various Resources such as Parking Management Fund, Fuel Tax, Traffic Fine, etc.; (3) Internalization of External Effects- Environment, Energy, Safety, Public Health; (4) Alternatives Analysis.

• BBMW with Shared Mobility: From land use and urban development (TOD+ICT) for Public Transport + Active Mobility + Shared Mobility

• New Technologies: ACE Vehicles- Automated, Connected and Electric
Thank You

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