

Taipei Mass Transit System

December 1st, 2010



CHS Consulting
Group

Taipei Mass Transit System

- MRT System
- Bus System
- High Speed Rail
- Intermodal Station
- ITS Application



Taipei Mass Transit System



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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 begin 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)

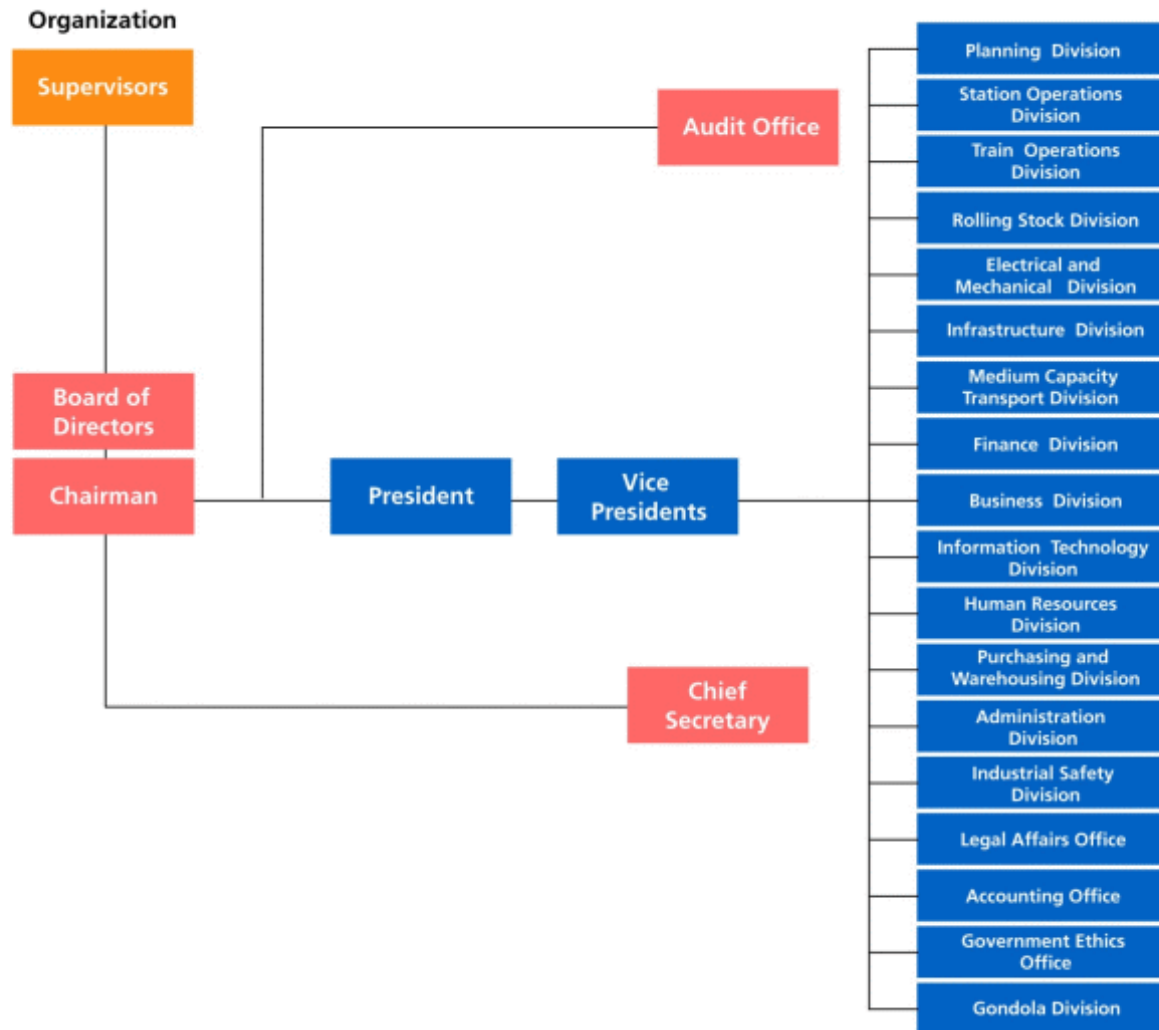
Taipei Rapid Transit Corporation

- 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%)

MRT Organizational structure



我們的長官



副總經理
Vice President



副總經理
Vice President



董事長
Chairman



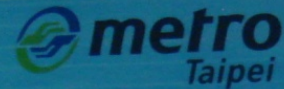
總經理
President



副總經理
Vice 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



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MRT Map



MRT Map - Future



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



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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



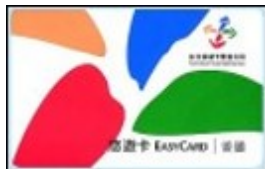
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MRT Fare Structure

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



- EasyCard (20% off; 25¢ discount while transferring between bus and MRT)



MRT Fare - By Zone





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Taiwan 台北攝 2010.06.20



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感應票卡或
投入單程票
謝謝搭乘

Please present card
or insert 1 token
Thank you

直接投入



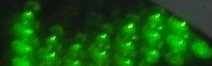
Insert
Token



投入口
Insert Token

單程票
Single-Journey
Ticket

1



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

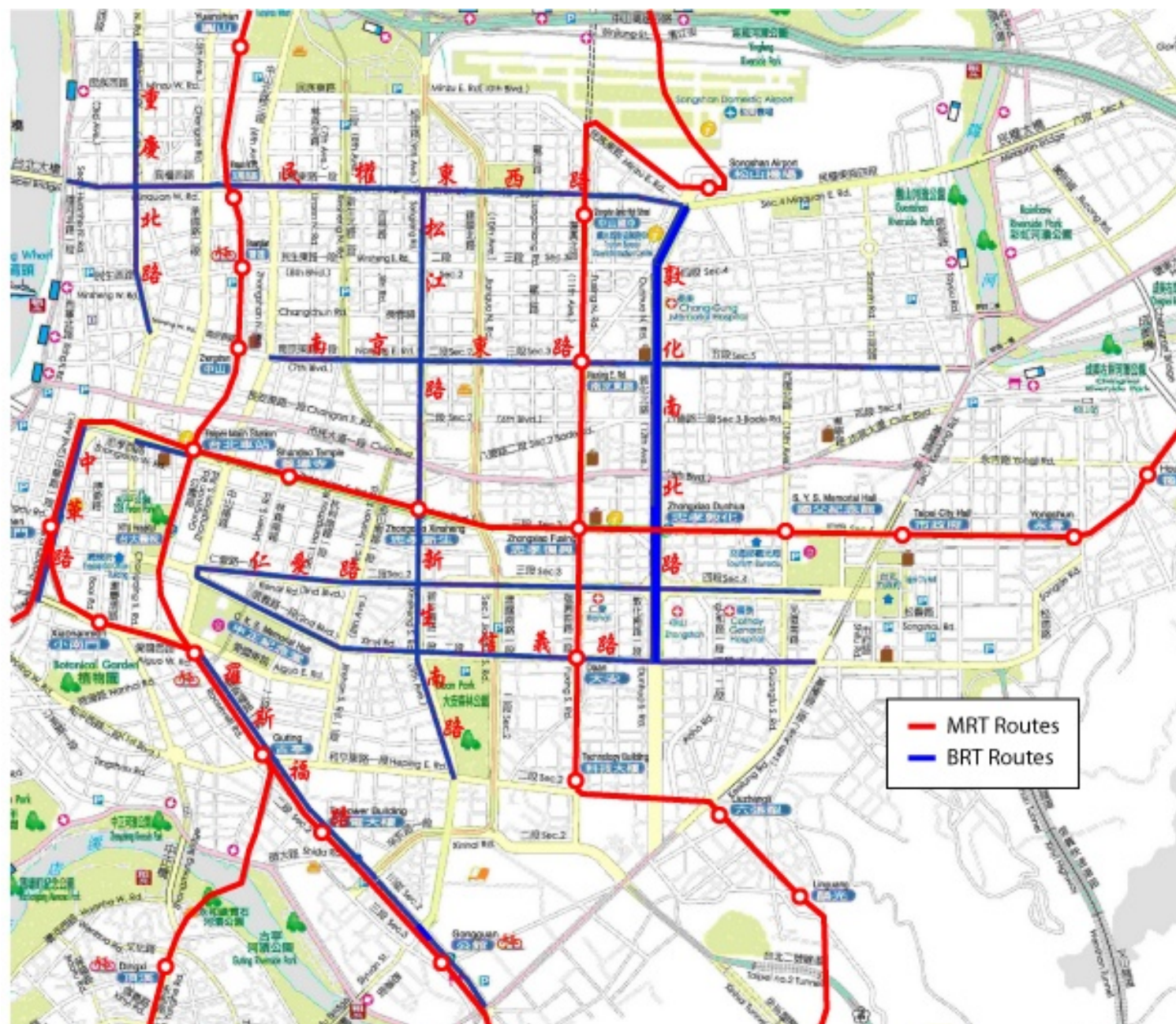


Taipei Bus System

- 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)





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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







Intermodalism and Land Use Integration



Taipei Mass Transit System



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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



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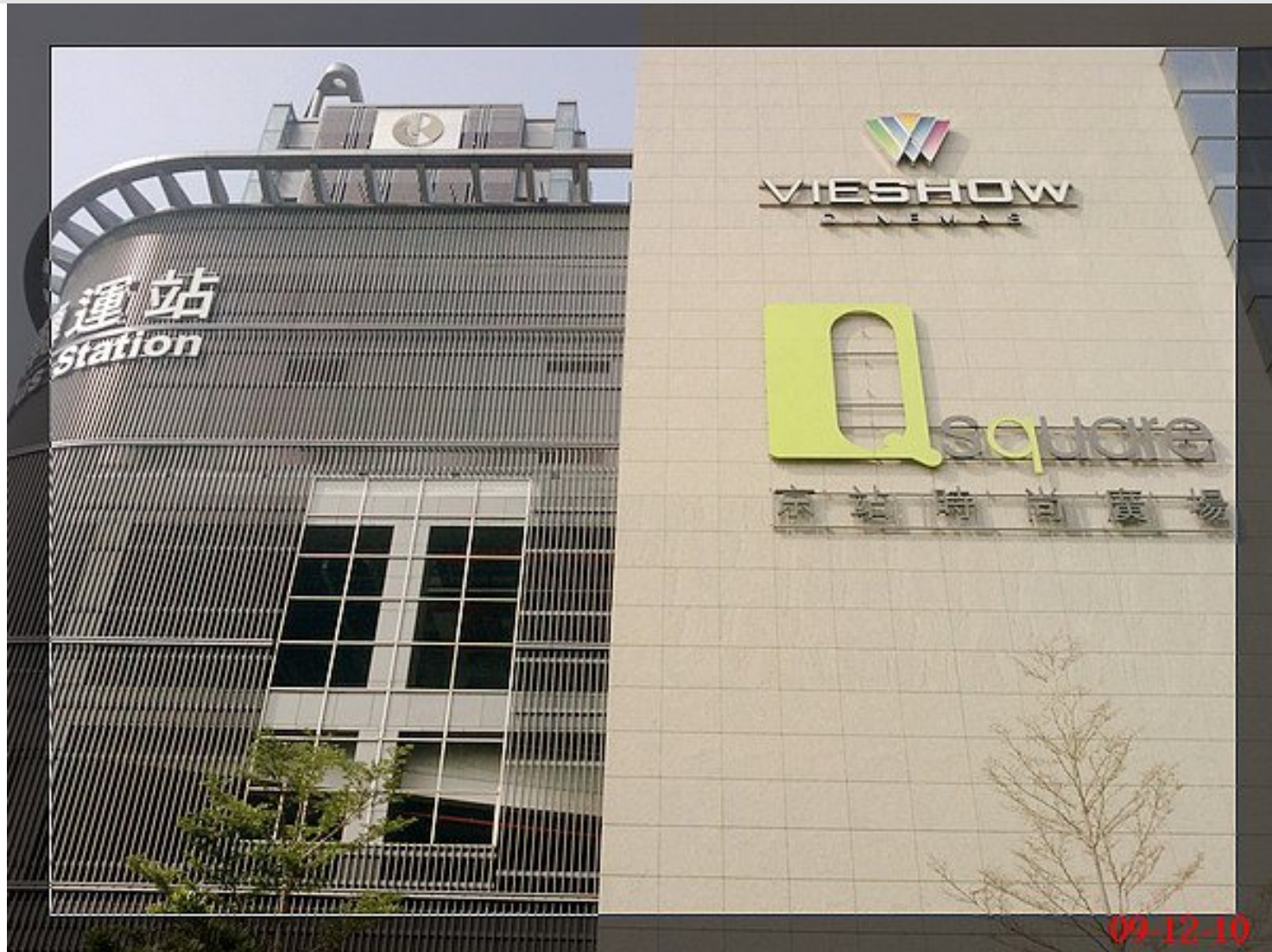


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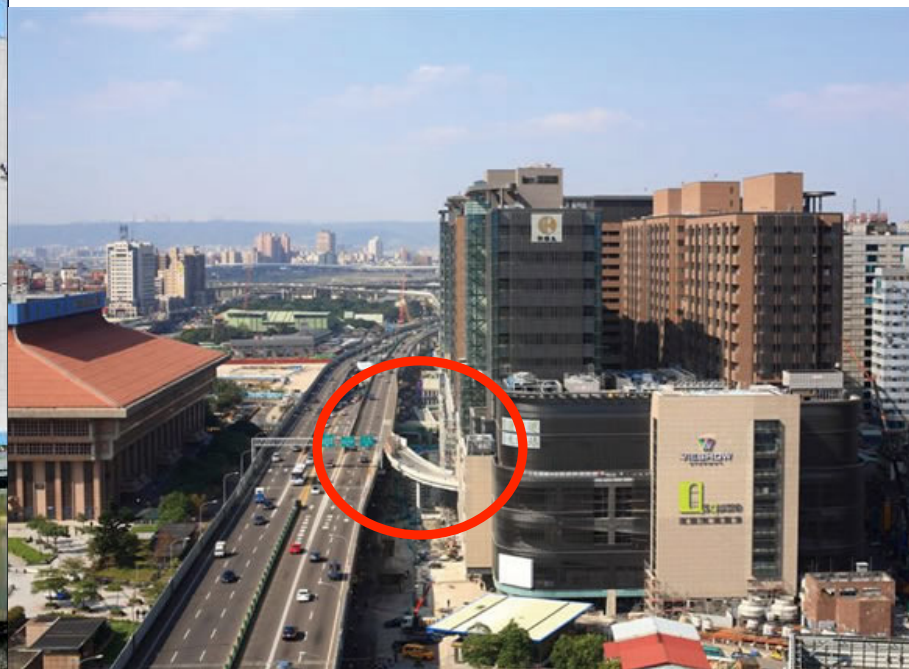
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Bus Terminal Connects to Shopping Center



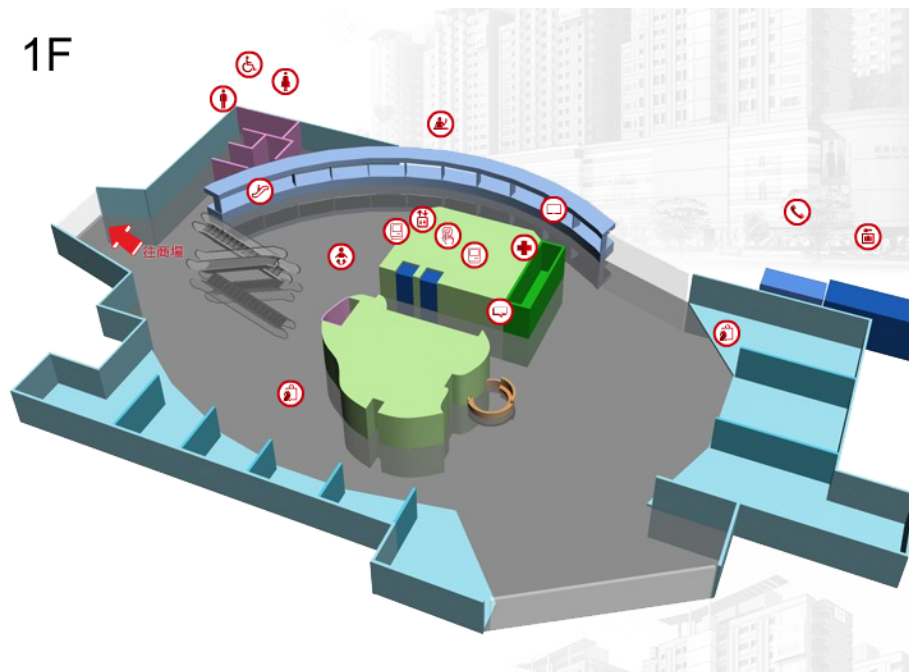


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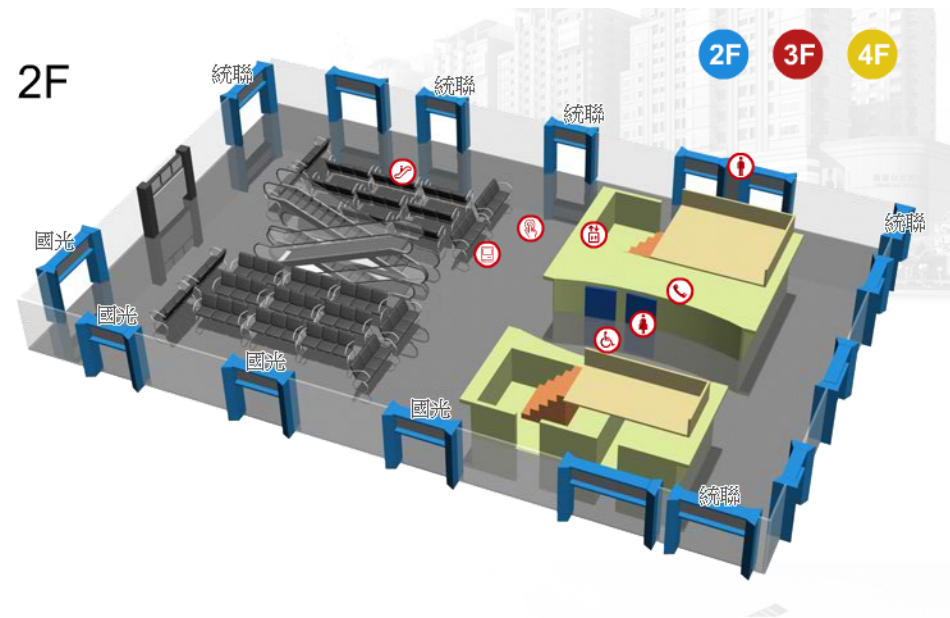


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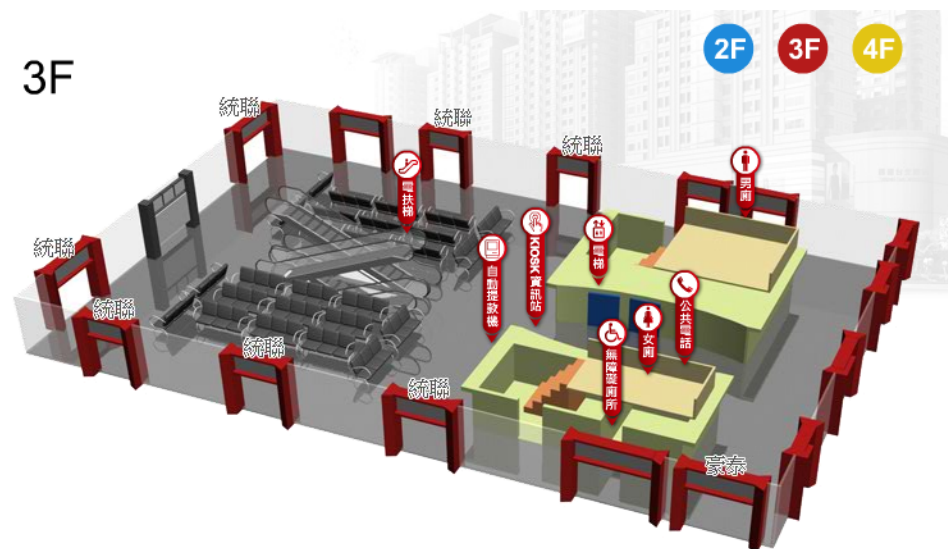
1F



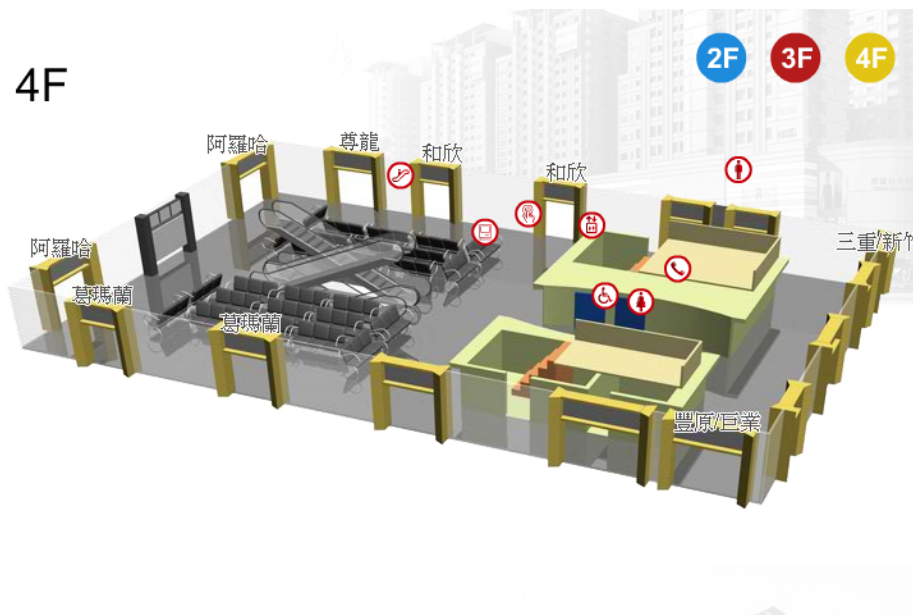
2F



3F



4F



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4

http://172.16.19.2 - 即時影像 - Microsoft Inte...

播放

10:02:27



完成

網際網路

三樓月台車輛數: 6

三樓車道車輛數: 4

2樓到3樓坡道車輛數: 0

3樓到4樓坡道車輛數: 0

三樓無裝置車輛數: 0

三樓車輛總計: 10

業者 數量

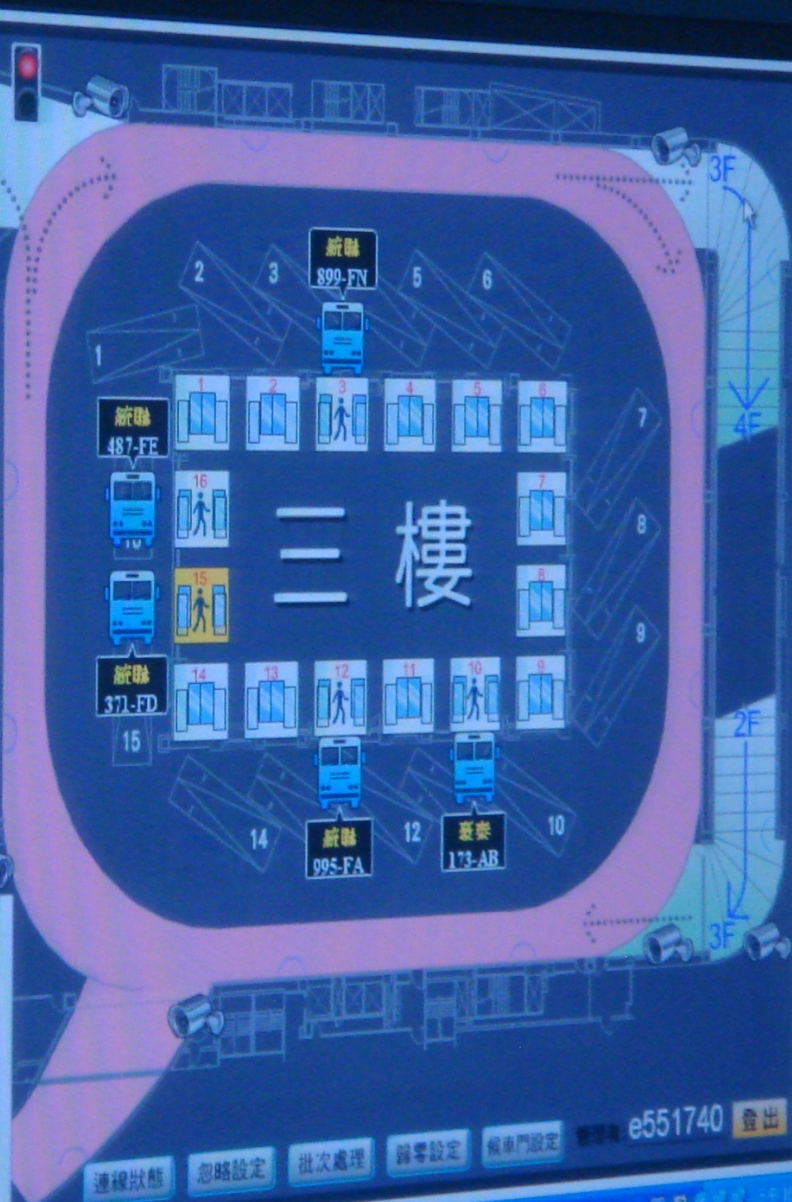
豪泰客運 1

國光客運 1

統聯客運 8

三樓告警資訊

位置	業者	車號	狀況	時間	檢視
月台7	統聯	161-AC	停留過久	2010/05/31 10:03:44	檢視
					檢視
					檢視
					檢視
					檢視



連線狀態

忽略設定

批次處理

器零設定

機車門設定

警報 e551740

登出

西曆 2010/05/31 10:03:44





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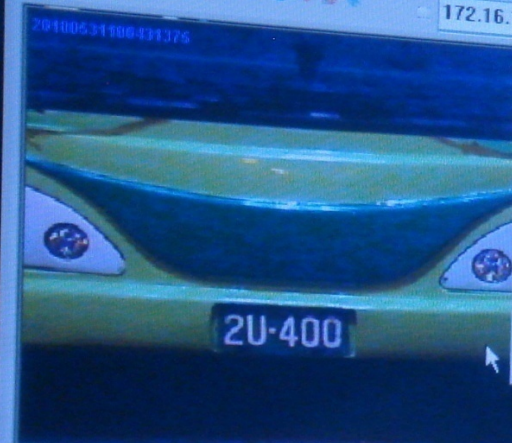
Taipei Bus Terminal





rfid1 (172.16.19.3, 192.168.1.253)

172.16.19.3



2U-400

2U-400 大門入口

Event log:

2010/5/31 上午 10:03:12 Alarm: nType=0,nId=-1,CarNo=FT-679
2010/5/31 上午 10:03:12 Alarm: FileName=ftp://172.16.19.31/CRXTLocal/20100531/1720
2010/5/31 上午 10:03:58 Alarm: nType=0,nId=-1,CarNo=FH-698
2010/5/31 上午 10:03:58 Alarm: FileName=ftp://172.16.19.31/CRXTLocal/20100531/1720
2010/5/31 上午 10:04:04 Alarm: nType=0,nId=-1,CarNo=2U-400
2010/5/31 上午 10:04:04 Alarm: FileName=ftp://172.16.19.31/CRXTLocal/20100531/1720

33

3樓月台 172
0002->收到封包
0003->複製檔案
0004->收到封包
0005->複製檔案
0006->收到封包
0007->複製檔案
0008->收到封包
0009->複製檔案
0010->收到封包
0011->複製檔案
0012->收到封包
0013->複製檔案
0014->收到封包
0015->複製檔案
0016->收到封包
0017->複製檔案

5 FPS

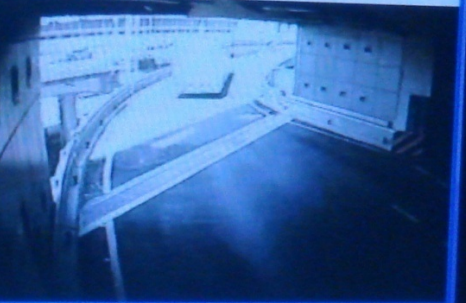
一升二坡道前段 2010/05/31 10:05:01



三降一坡道 2010/05/31 10:05:01



市民站道 2010/05/31 10:05:01



平帶道轉

追緝車號	目前位置	追緝原因
161-AC	307	統-換電池
015-AC		統-換電池
021-AC		統-換電池
076-FB		和-更換卡片







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





台北車站資訊圖

Taipei Main Station Information Map

地下一層 B1



地下三層 B3



地下二層 B2



地下四層 B4



- 詢問處 1.2.3 Information 1.2.3
- 服務卡服務中心 Service Center
- 遺失物中心 Lost and Found
- 捷運票務處 MTR Ticketing
- 捷運商店 MTR Souvenir Store
- 哺乳室 Breastfeeding Room
- 公共電話 Public Telephone
- 捷運捐血室 Blood Donation Center
- 緊急出口 Emergency Exit
- 洗手間 Toilet
- 無障礙電梯 Accessible Elevator

車站剖面位置圖

Station Profile

← 忠孝西路方向
南出口
South Exit





往捷運車站
MRT



計程車乘車區
Taxi pickup area



臨停接送區
Kiss and ride



往台鐵車站
TRA



車廂 1-6
Car 1-6









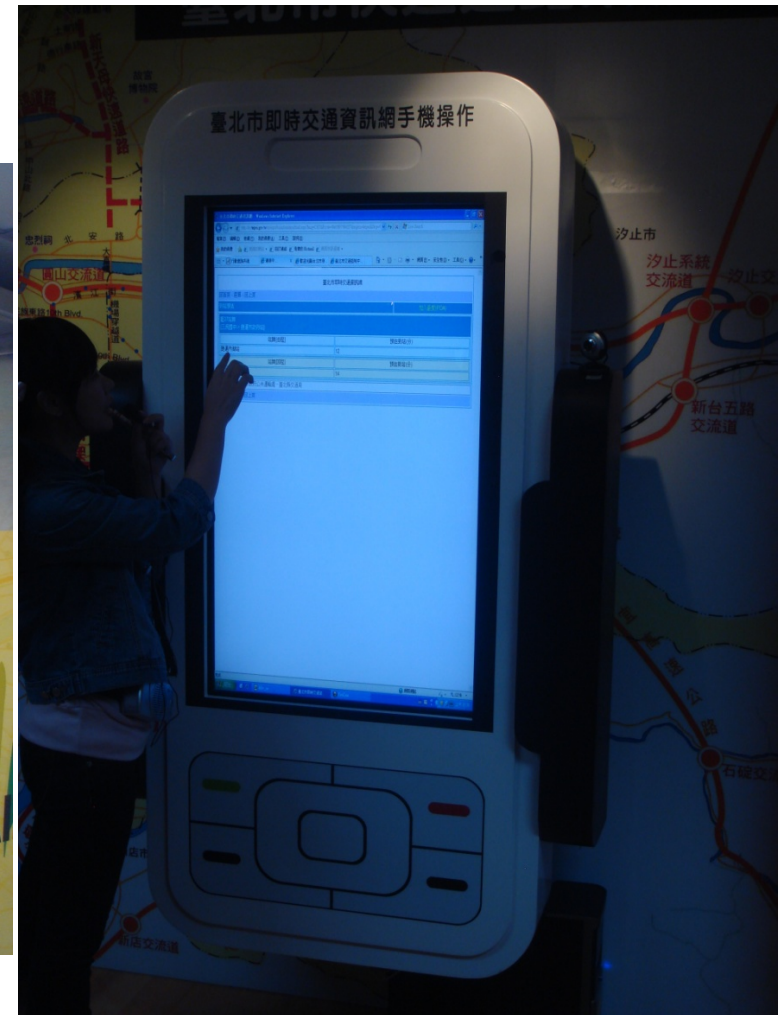
Transit ITS Application

- Real Time Arrival Information
- Web based schedule and arrival time - computer and cell phone

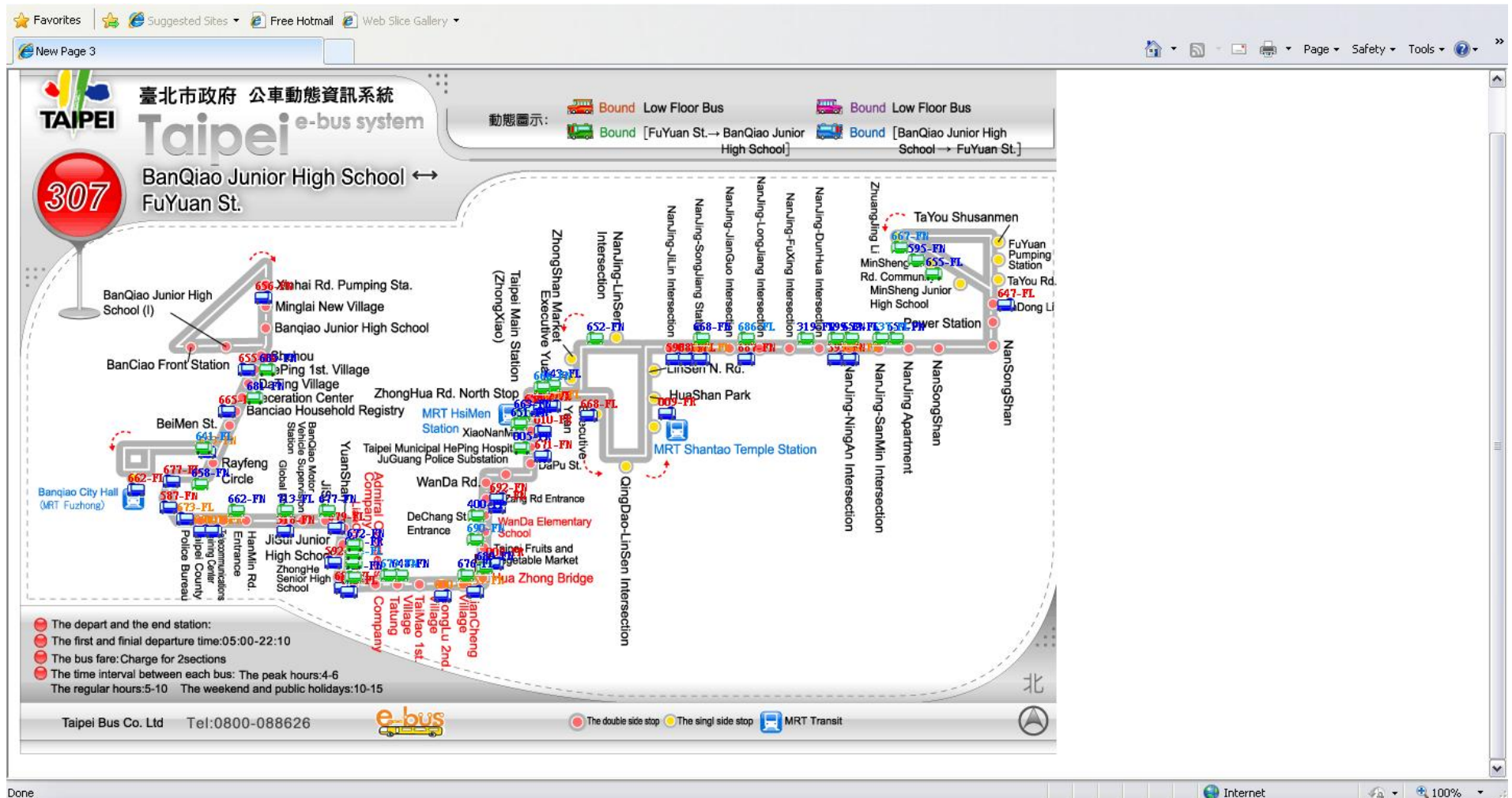
Bus Stops and Real Time Messaging



Bus Stops and Real Time Messaging



Bus_Online Real Time Information



Online Trip Planner

5284我愛巴士(臺北市動態公車資訊網)

Taipei Bus Information and Transit System

Home Help Mobile PDA Widget EBUS 中文

GIS Bus Line GIS Trip Planner Quick Search Related Info My Bus

My Bus Login 5284小筆電使用者,建議可使用F11(全螢幕)顯示方式來取得頁面完整資訊!!----- 0010913 Visitors

From Stop Landmark Add Crossroad MRT & Bus EXPO

MRT Taipei Main Station(Jhongjheng District)

To Stop Landmark Add Crossroad MRT & Bus EXPO

BARCOOE(Sinyi District)

Start Refresh

Result

Start:MRT Taipei Main Station
End:BARCOOE

★Connection【1】

travel	Stop Name	Trans Type	Description
Direct bus	Taipei Main Station (Qingdao Exit)	XinYi Main Line	Walk 157m and then take bus no.XinYi Main Line from Taipei Main Station (Qingdao Exit), get off after 14 stop(s) at Xinyi District Center Bus Stop and walk 322m where the destination is located.
	Xinyi District Center		

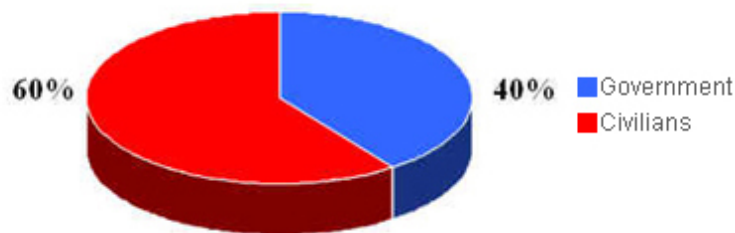
Taipei Main Station

景碩科技股份有限公司 TMS Technologies CO., LTD.

Done Internet 100%

EasyCard

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



EasyCard

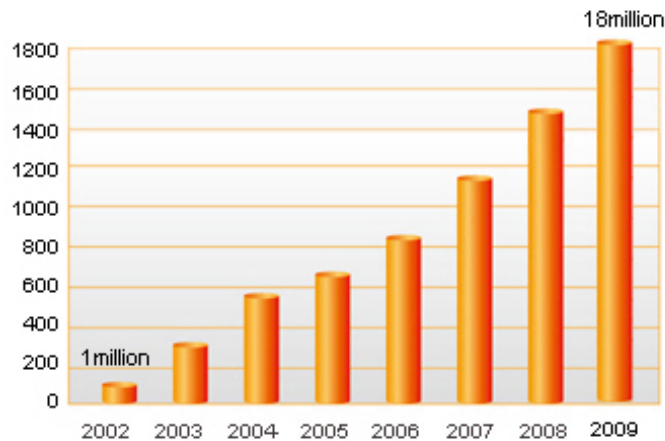
- Easy Card can be used for
 - All transit modes (except HSR), Taiwan Railway
 - Intercity bus, and taxi
 - Parking, public bicycle rental
 - Taipei Zoo and Library
 - Designated stores (i.e. convenient stores, pizza hut, dunkin donut, and so on)



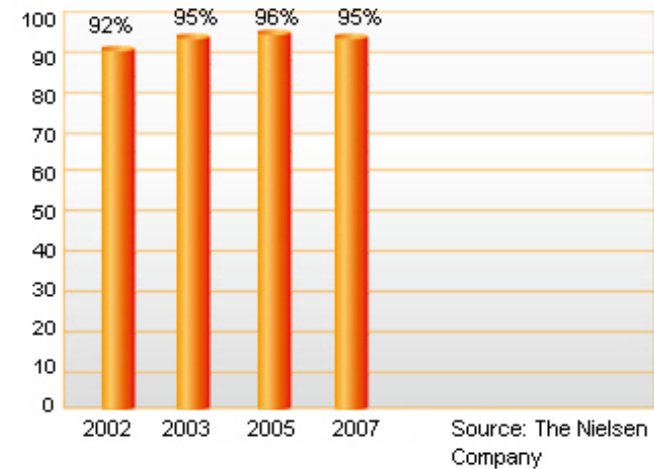
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EasyCard Fact

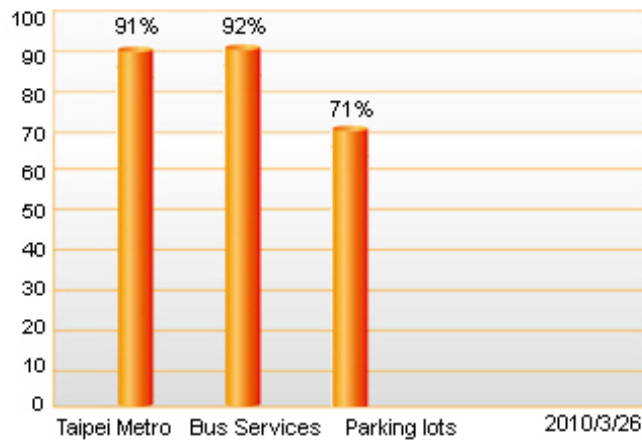
Card Issue



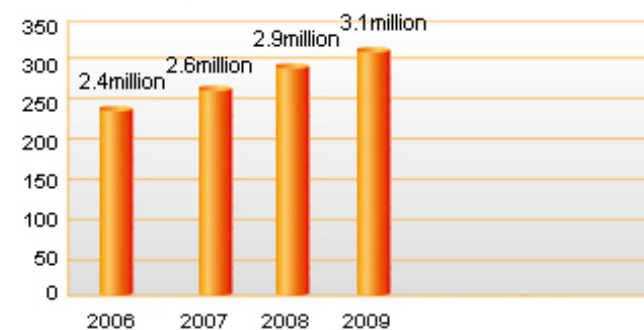
Customer Satisfaction



Overall Usage



Average Number of Daily Transactions



END

Questions and Answers





Taipei City DOT

Organizational Chart

