9th World Congress on ITS
Chicago, 2002
Special Session SS26
"Sustainable Mechanisms for Public Transportation
- ITS Deployment and Operations"

ITS Initiatives for CRM in Urban Transport

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Mission of this Presentation

Issues for Urban Transport in Japan

1. Changing Environment

①Air Pollution and Global Warming
②Low Birthrate and Ageing Society
③Globalization and Localization
④Improving Information Technology

2. Public Transport –where we stand-

①Decreasing Demand, Shift to Automobiles
◆share of public transport in Japan per person/km
1965 railway: 67%, bus: 19%
1998 railway: 27%, bus: 4%
②Severe traffic jams, terrible congestion during rush hours
③Deregulation in Transport Market
④Need for Enhanced Security

3. In need of Sustainable Mechanisms for Public Transportation

◆ CRM (Customer Relationship Management) Strategy by utilizing Mobile Phones and Smart Cards

Mission of this Presentation

I **Revisit Major Functions of ITS Technologies**

II **Identify ITS Technologies that would serve as Sustainable Mechanisms for Public Transportation**

III **Propose CRM (Customer Relationship Management) Strategies for Urban Transportation**

IV **Conclusion**

Major Functions of ITS Technologies

Ⅰ How do ITS technologies function in transportation sector ?

Back to Basics（1）

- Transportation-

■ **Provide safe, smooth and seamless operation of vehicles etc.**

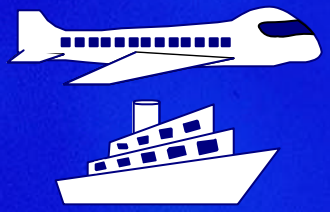
- Passengers -

■ **Need for safe, smooth and seamless transportation**

Back to Basics（1）

Major Areas in which Vehicle Oriented ITS Technologies are deployed

Aviation,Maritime Transport

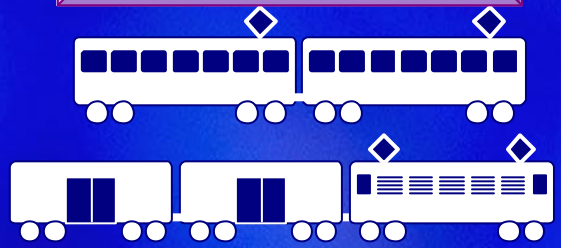


- C Communication
- N Navigation
- S Surveillance
- O Operation

FANS, WAAS

ITS at SEA

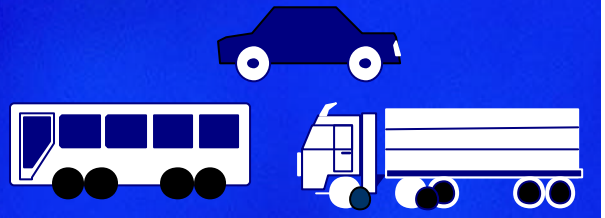
Railway



- C Communication
- O Operation

Advanced Railway Controlling System

Automobile



- C Communication
- N Navigation
- S Surveillance
- O Operation

Advanced Safety Vehicle
Advanced Cruise-Assist Highway Systems

I T S

Back to Basics（2）

- Transportation-

- Provide safe, smooth and seamless transportation
- **Utilization of capacity, yield management, secured service**

- Passengers -

- Need for safe, smooth and seamless transportation
- **Need for reasonable, convenient and secured service**

Back to Basics (2)

(Business Journey, Leisure Travel)

(Reservation, Payment)

(Access to Terminals, Commuting)

ITS Technologies that Improve Interaction Between Passengers and Providers of Transportation

Planning

Checking timetable, tariff, routes, etc Transaction

Consulting booklets

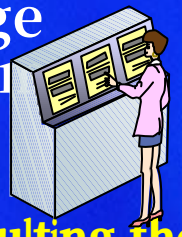
Calling up travel agents

Action

Delay due to accidents, etc.

Learn about it after arriving at the terminal

Purchasing tickets, extra charge settlement



Consulting the fare table and buying a ticket
Extra cash payment

Easy, fast

Retrieve and compare

Smooth, reliable

Information Prior to action

mobile

PCs, mobile phones connected to Internet

convenient

Smart card

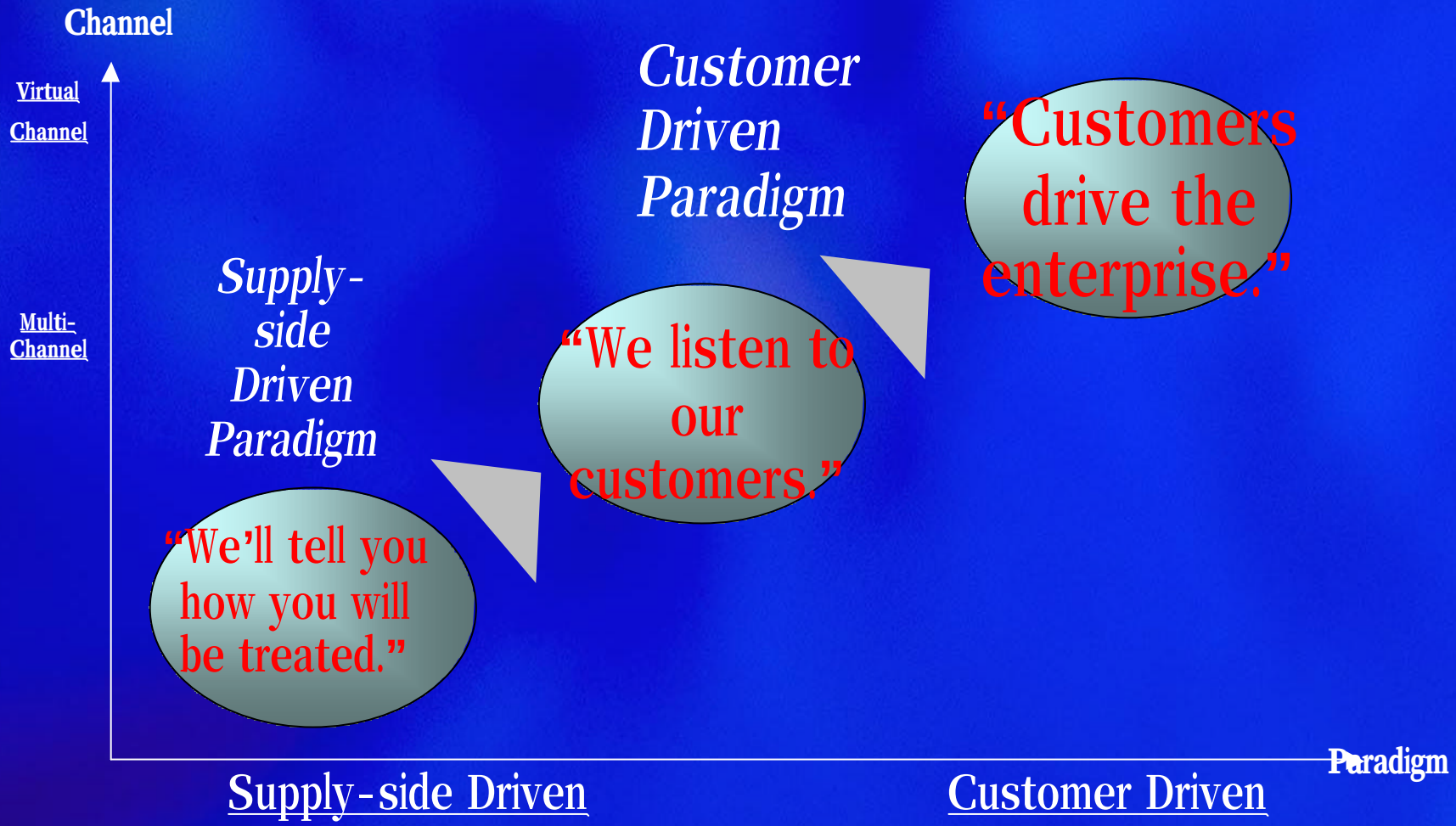
II CRM for Urban Transport

(1)Customer Relationship Management

Rush Hour in Shinjuku Station, Tokyo

Concept of CRM

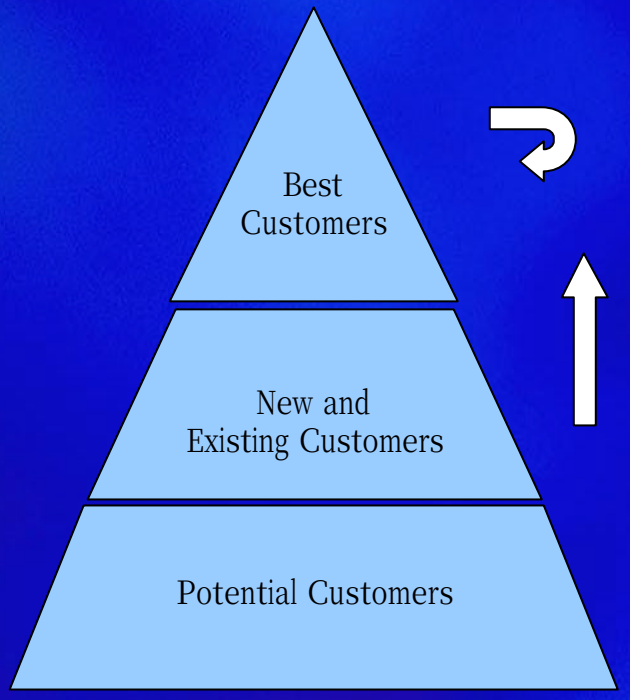
- Key Elements of Modern Marketing (4Ps)
- Product, Price, Place (i.e., Distribution) and Promotion



Concept of CRM

- CRM is aimed to establish long-term relationship with customers

Customer Pyramid | Aim | Strategies



Enclose

Develop

Cultivate

- **Market Segmentation ⇒ <u>One-to-one Marketing</u>**
- **Customized Marketing ⇒ <u>Mass-Customization</u>**
- **Long-term Relationship with each Customer**

  ⇒ <u>Sustainable Interaction</u>

- **Discover New Market Segments**
- **Combine Research & Development with Market Segmentation**
- **Challenge New Regions**

Concept of CRM

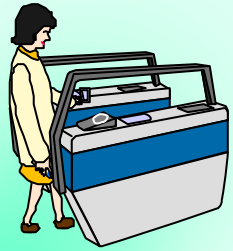
- Strategies to Create Long-term Relationship
  ⇒ *Sustainable Interaction*

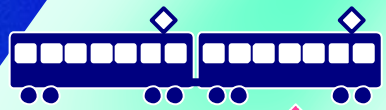
- Establish a Friendly and Intimate Relationship with the Customers
- Provide Money-Saving Incentives
- Serve as a "Portal" Company for Service Related to Transportation
- Establish an Environment-Friendly Brand Image for the Customers to Associate Themselves With
- Provide a System that has the Potential of Enhanced Security

(2) Smart Cards

Smart Card

Contact-less
(no need to take the card out of your purse)





Smooth transfer, easy extra charge settlement

Railway

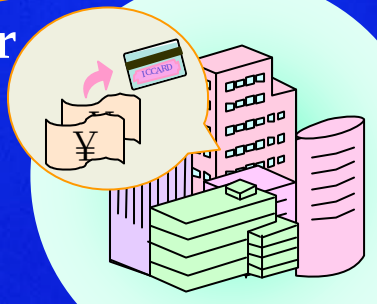
No need to consult fare table

Card loader

No need to purchase a ticket

Bus

Charged to your bank account

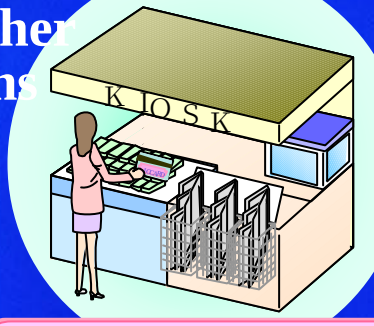


Banks

Multimodal

Taxis

Useful for other transactions



Shopping

Smart Cards Introduced in Public Transport

1. Bus

company	area	start	
Tokyu Transses	Tokyo	Jul-98	frequent discount
Do-hoku Bus	Asahikawa	Nov-99	commuter pass, frequent discount, double application
Yamanashi Kotsu	Koufu	Feb-00	commuter pass, frequent discount, double application additional discount when adding value + transfer discount
Kita-Kyushu Bus	Kitakyushu	Sep. 01	frequent discount+one-day pass commuter pass
Fukushima Kotsu	Kooriyama	Sep. 01	commuter pass, frequent discount, double application additional discount when adding value + transfer discount

2. Railway

company	area	start
Japan Railway East	Greater Tokyo Region	Nov. 18, 01

Railways and subways in Kansai(Osaka Region) now planning to introduce post-payment system → a major step towards realization of CRM for urban transport

Post-Payment Smart Card

- **Step I: Electronic value is automatically loaded when the value on the smart card comes bellow a certain level. Additional value loaded is charged to your bank account.**

- **Step II: Trips data are compiled, volume discounts applied and charged to the card-holder on a monthly basis. This genuine post-payment system will be tested in Sapporo early 2003, and implemented as an on-going service in Osaka from mid 2003.**

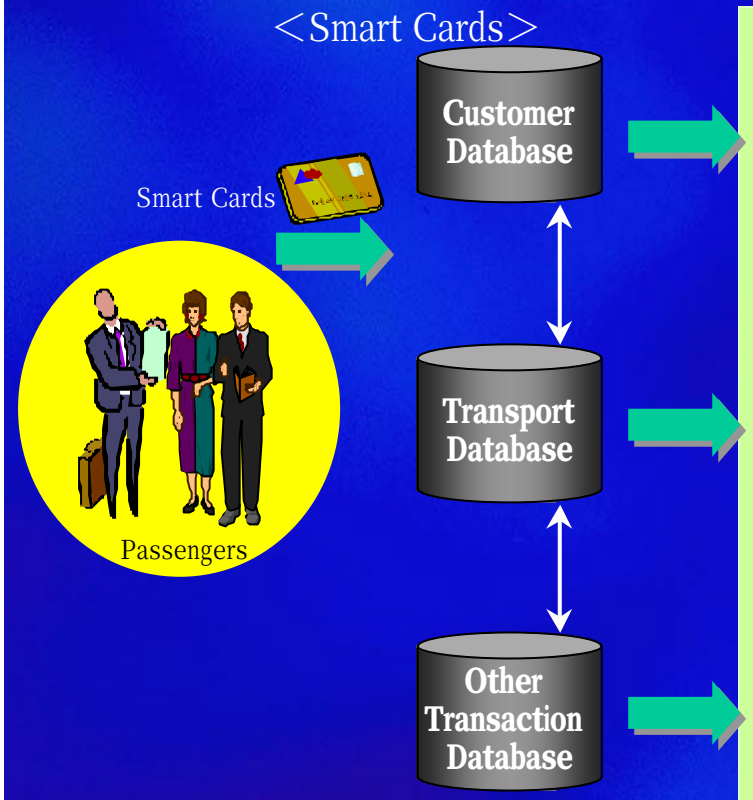
Post-Payment Smart Card

- **The innovation in the system is in the credit control rather than in the ITS technology.**

- **The Post-Payment system would open the window of opportunity for CRM in urban transportation.**

CRM for Urban Transport

- By utilizing digital data compiled from smart cards, CRM concept can be applied to Urban Transportation



Strategies for CRM

- Enhanced Discount Fares for Off-Peek Commuting on Weekdays
- Introduction of Package Fares for Shopping and Recreational Activities on Weekends
- Introduction of "Green-Mileage System" as an Additional Incentive for Utilization of Public Transport

CRM for Urban Transport

Current Fare System

- 45% of the people in major Japanese cities use commuter pass, set according to validation period of one , three and six months
- Other than the commuter pass, simple frequent-rider discount is available
- All fares needs to paid in advance
- No incentive for off-peek commuting, nor for family/group use in weekends to match use of automobiles

"Flexible Pricing System"

- Enhanced Discount Fares for Off-Peek Commuting
- Introduction of Package Fares for Shopping and Recreational Activities on Weekend
- Introduction of Post-Payment System to Identify Frequency of Use

"Green-Mileage System"

- Utilization of the Post-Payment System
- Mileage given in accordance with frequency of the use of public transport

  ⇒ Mileage could be donated to environmental organizations or tied up with Time Dollars program

- Utilize data as a reference for the level of environmental awareness in our daily life

  ⇒ Analogy of the environmental accounting system or ISO-14000 series could be applied to urban life by using the "Green-Mileage"

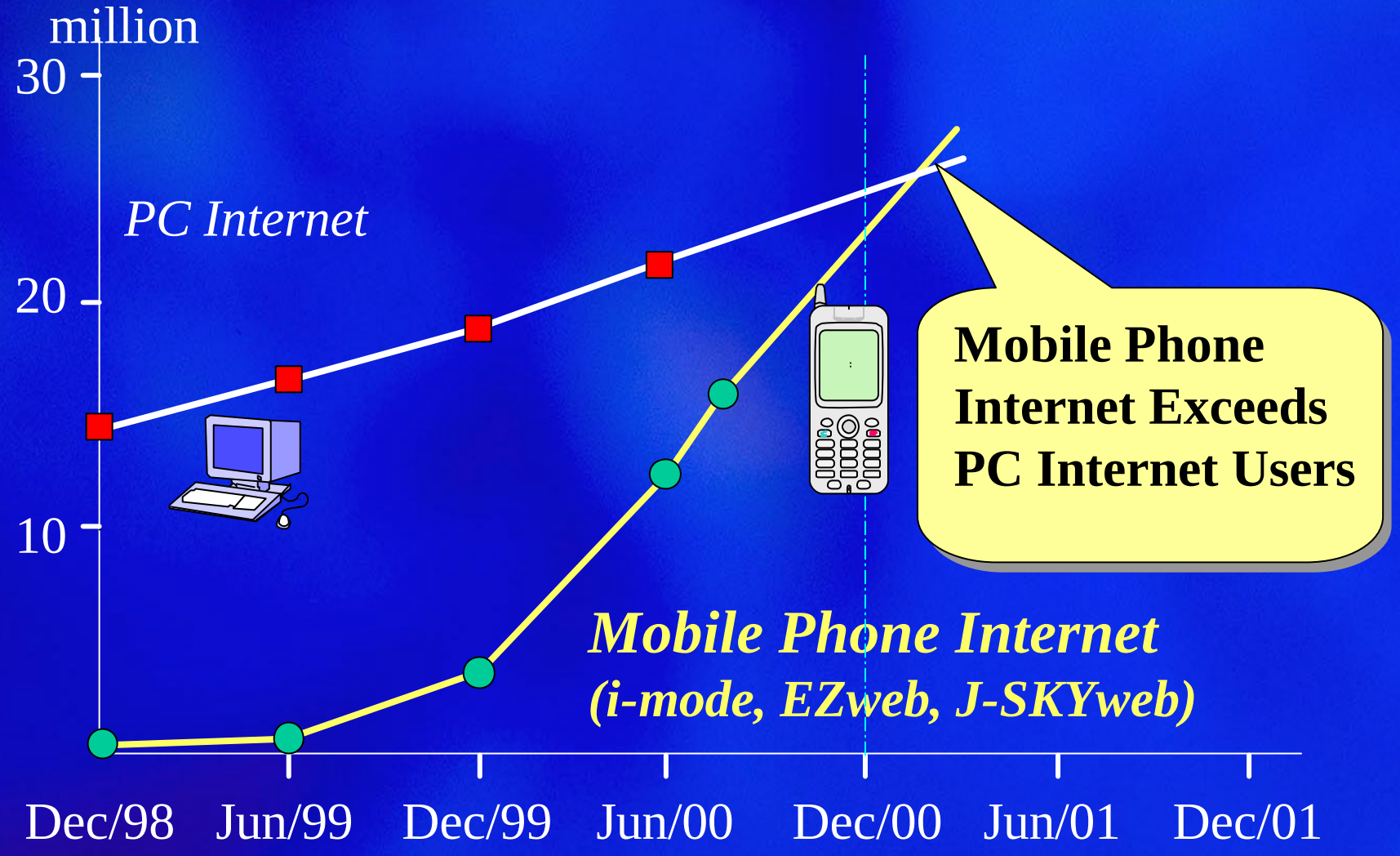
"Enhanced Security System"

- Utilization of the Smart Card Membership to Enhance Security

  ⇒ Membership could serve as a shield to protect ourselves from anonymous threat during transport, since it provide us an opportunity to reveal our profile

(3) Mobile Phones

Mobile Phone Internet in Japan



EKI-TAN “Ekimae-Tanken Club” meaning “Station-area Expedition Club”

■乗り換え案内
六本木–成田空港間の経路
01/10/01 14:00発

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[1] 1 時間 15 分 3100円
●日比谷線 普通
六本木 14 :13
-銀座 △14 :22
●丸の内線 普通 160円
銀座 14:25
-東京 △14 :28
●成田エクスプレス25号
東京 14 :33
-成田空港 15 :28

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[2] 1 時間 40 分 1540円
●大江戸線 普通
六本木 14 :01
-門前仲町 #14:17
●営団東西線 快速 370円
門前中町 14 :21
西船橋 ↓
●東葉高速鉄道 快速 610円
西船橋 ↓
東葉勝田台 △ 15 :02
●徒歩 3分
東葉勝田台
勝田台
●京成本線エアポート快特 560円
勝田台 15 :11
成田空港 △ 15:41

Screen Size

★検索結果
六本木 –
成田空港
01/10/01 14:00発

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[1] 1時間15分
=合計=3100円
*日比谷線 普通
六本木 14 :13
銀座 #14 :22
*丸の内線 普通
銀座 14:25
東京 #14 :28
--小計—160円
*成田エクス25号
東京 14 :33
成田空港 15 :28
--小計—2940円

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[2]1時間40分
=合計=1540円
*大江戸線 普通
六本木 14 :01
門前仲町 #14:17
*営団東西線 快速

PC

Toshiba

PDA

Mobile Phone

EKI-TAN "Ekimae-Tanken Club" meaning "Station-area Expedition Club"

Mobile Phone *EKI-TAN*

Screen Size on the Mobile Phone

★検索結果
六本木 –
成田空港
01/10/01 14:00発
---
[1] 1時間15分
=合計=3100円
*日比谷線　普通
六本木　　14 :13
銀座　　#14 :22
*丸の内線　普通
銀座　　14:25
東京　　#14 :28
--小計—160円
*成田エクス25号
東京　　14 :33
成田空港 15 :28
--小計—2940円

Designated by using the key-board on the phone

translation

★Retrieval Results
Roppongi –
Narita Airport
01/10/01 14:00 Dep
---
[1] 1h15min
=fare=3100 yen
*Hibiya Line　(sub)
Roppongi　　14 :13
Ginza　　#14 :22
*Marunouchi Line
Ginza　　14:25
Tokyo　　#14 :28
--sub total-160yen
*Narita Express#25
Tokyo　　14 :33
Narita　　15 :28
--sub total-2940yen

Toshiba

EKI-TAN Route Guide Map

PC

★行き方Map
行き先:東芝
最寄駅:浜松町
約7分,375m

騙東京ガス
ご利用上の注意(必読)

文字Map
ラリーMap
周辺Map
乗り換え案内
駅リモコン

各種Mapについて

行き方地図TOP
首都圏駅探TOP
(C)TOSHIBA
2001

PDA

Screen Size

★文字Map
▼浜松町駅南口から[1]東京ガスの見える方向に道なりに130m進む
▼5叉路の右から二番目の道を220m進む
★左が目的地

0.戻る

行き方地図TOP
首都圏駅探TOP
(C)TOSHIBA
2001

mobile Phone

Toshiba

Dynamic Railway Irregularity Information System

On site

Before (analogue)

Information

Analogue info

Operation command

Railway operation centers

news release to the media

Emergency operation plan

From now (digital)

XML format data

Internet news

- •display at stations
- • information to other railway companies
- •digital broadcasting
- •internet provider
- •mobile phone info service

Advanced Transport Forum - JAPAN

Forum composed of key members from industry, universities and administration

Forum Started September 2001

- Share Common Goal & Strategy
- Foster Various Demonstration Projects

＜theme＞

◇ITS initiatives for CRM in Urban Transport

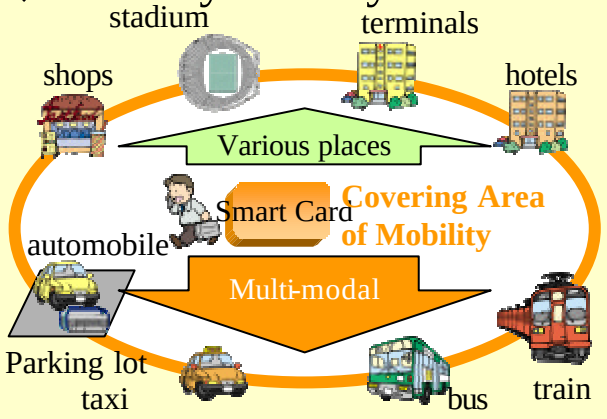
◇Information technology for Traffic Demand Management in access to large event sites

- First Report on Major Issues to be Addressed (April 23, 2002)
- Demonstration Projects during the World Cup and after

ITS-CRM Projects at Major Cities in Japan, etc.

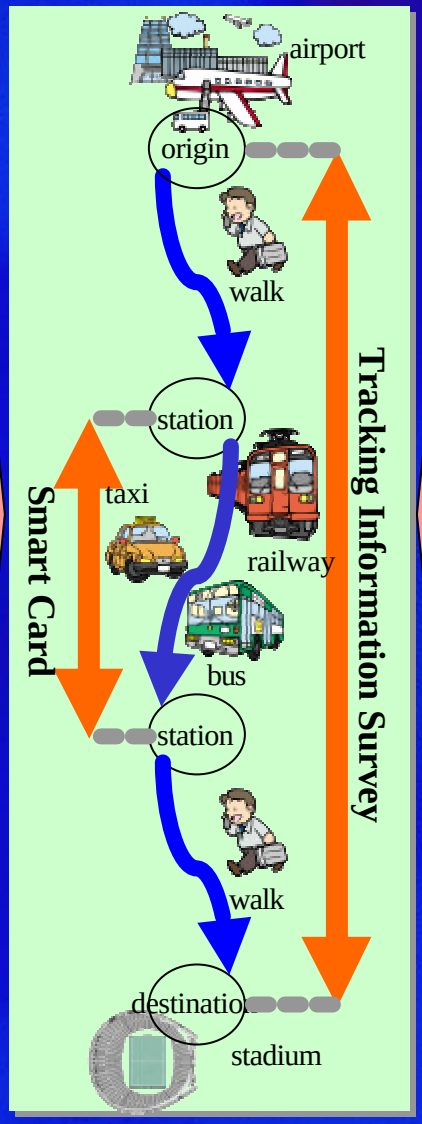
Multiple Application Smart Card

- ◆Transport and Purchasing Activities by single Smart Card
- ◆Multiple Currency
- ◆Post Payment System



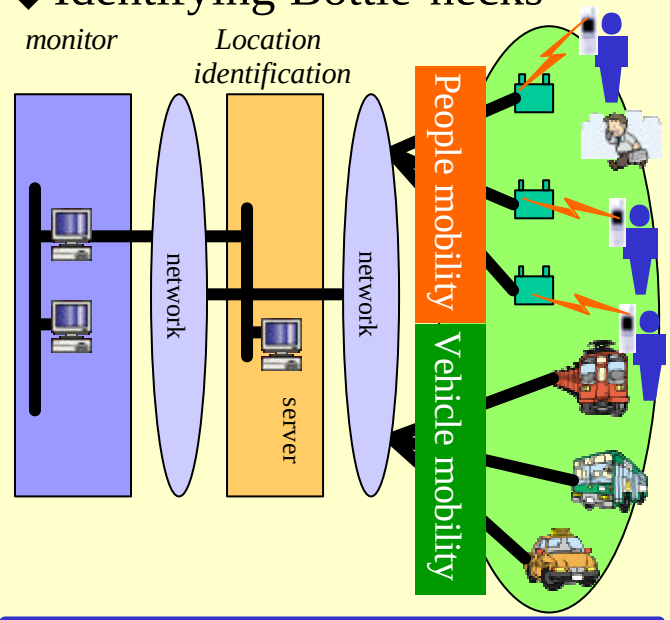
Multi-functional Transaction

Flexible Fare System and Incentives



Dynamic Probe Information System

- ◆Location tracking by PHS
- ◆Mapping Information on GIS
- ◆Identifying Bottle-necks



Improved Mobility in Large Events, Airport Access etc.

Projects to be initiated at major cities in Japan in conjunction with Hong Kong, Singapore, etc.

Coming Projects

- **Function of the contact-less smart card could be embedded in mobile phones.**

- **Transactions for public transportation and ETC, as well as such applications as traffic information and navigation could be integrated into mobile phones.**

- **MLIT is working on a pilot project to be demonstrated in the 11th ITS World Congress in Nagoya, 2004.**

III CONCLUSION

Conclusion（1）

Agenda: Customer Driven and Multi-modal Approach to Solve Urban Transport Issues

Mission

Facilitate Basic Infrastructure for Sustainable and Secure Transportation

Strategy

“CRM” and “Information Platform for Multi-modal Transportation”

Conclusion （2）

Agenda: Involvement of Various Experts

Mission

Industry, Universities and Administration
Sharing Common Goal & Strategy,
Fostering Various Demonstration Projects

Strategy

Discussions in “Advanced Transport Forum - Japan”

Conclusion （3）

Agenda: Global Initiative -International Cooperation-

Mission

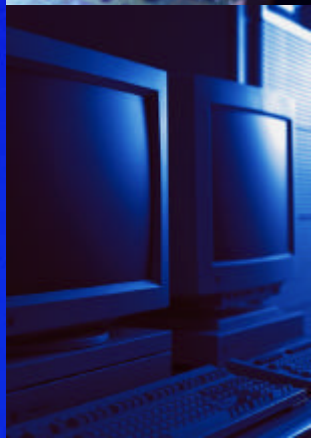
Promote Sustainable and Secure Urban System World-wide

Agenda

International Policy Research Cooperation
⇒ ITS Initiatives World-wide

Thank You for Your Attention

ITS



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