Supplementary Note

Transport Information System and Journey Time Indication System

Introduction

This note provides the following supplementary information on the Transport Information System (TIS) and Journey Time Indication System (JTIS) –

(a) the estimation of benefits;
(b) the experience in implementing TIS and associated services in Japan; and
(c) the channels of disseminating information under the TIS.

Background

2. At the meeting of the LegCo Panel on Transport held on 18 May 2001, Members discussed the Administration's proposal of implementing TIS and JTIS in Hong Kong. While supporting the proposal in general, Members requested the Administration to provide supplementary information as stated in paragraph 1 above before the Finance Committee considered the funding request for implementing the two systems at its meeting on 25 May 2001.

Estimation of Benefits

3. The implementation of TIS and JTIS could help road users avoid congestion. This would bring benefits in the following areas –

(a) savings in travelling time;

(b) indirect savings in vehicle operating costs;

(c) improved safety and lower total vehicle emissions; and

(d) more efficient use of our limited road space and better image of Hong Kong.

4. While the details of the cost and benefit analysis are set out in the FCai paper (FCR(2001-02)7), paragraphs 5 to 11 below further explain how the benefits are derived.

5. With the TIS, motorists could use the route guidance function of the system for pre-trip planning, hence avoiding congestion points and saving travelling time. There are about 1.34 million private vehicle trips made every weekday, where 410,000 trips are regular trips (for normal work and school journeys) and 930,000 trips are non-regular trips. Based on a conservative estimate of some 5% of the non-regular trip driver using the route guidance function under the TIS to find the shortest or fastest routes for their trips, it is expected that the average trip time saving would be about 5 minutes per trip for these 46,500 non-regular trips per day.

6. Based on the values of time adopted in the Third Comprehensive Transport Study which was completed in 1999, the weighted average value of time of motorists is $1.7 per minute. Using 250 working days a year, the annual benefits accrued from motorists arising from savings in travelling time are about $100 million.

7. Separately, there are about 9.89 million public transport passenger trips (excluding taxi trips) made every weekday, among which 4.33 million are non-regular trips. Again using a conservative estimate that some 5% of such public transport passengers would use the public transport inquiry service available under the system, it is expected that an average of 3 minutes per trip would be saved for 216,500 public transport passenger trips per day. The weighted average value of time of public transport passengers is $1.13 per minute, and the annual benefits accrued from public transport passengers are about $180 million.

8. For the JTIS, there are about 260,000 passenger trips crossing the harbour from Hong Kong Island to Kowloon during the peak hours every day. It is expected that the travelling time of 5% (or 13,000) of these trips could be saved by 3 minutes per trip. The weighted average value of time of motorists and public transport passengers during peak hours is $1.17 per minute and the annual benefits accrued from motorists and passengers are about $11 million.

9. The above are rather conservative estimates assuming a low usage rate of only 5% and that only Government services are provided under the TIS. With the provision of value-added services offered by the private sector, such as vehicle navigation, parking reservation, tour package for tourists, real-time public transport information at bus stops, etc, the benefits accrued are expected to be much greater. However, it is difficult to quantify the actual benefits at this stage as the provision of such services would depend on the demand for such service and the response of the market. Nevertheless, overseas experience shows that the private sector takes a very active role in providing personalised services to road users, and competition among companies enable the services to be provided at attractive prices to the benefit of the consumers.

10. The implementation of the TIS and JTIS forms part of the overall Intelligent Transport Systems (ITS). Based on overseas experience, the implementation of the whole ITS shows reduction in travelling time ranging between 20% to 40%. Assuming similar reductions in Hong Kong, the estimated annual economic benefit would be in the order of $14 billion to $28 billion. As a result of reduction in travelling time, fuel consumption and therefore vehicle emissions would also decrease.

11. According to overseas experience, existing road capacity could be increased by up to 20% with the full implementation of ITS. To achieve the same result by building new roads in Hong Kong, the construction costs alone (without taking into account land costs, technical feasibility and the environmental impact) would cost at least $30 billion.

Experience in Japan

12. Overseas experience shows that the private sector plays a major role in developing the Intelligent Transport Systems. Once the Government has provided the basic infrastructure, the private sector would come in and develop different packages of services for different targetted road users.

13. In Japan, for example, a Vehicle Information and Communication System (VICS) was established in July 1995 with funding from both the Government and the private sector. About 100 private companies in the automobile industry and the transport sector contribute to the funding of the system.

14. Real-time information is provided by a Government-run Japan Road Traffic Information Centre and other private sources such as car park operators. The information is transmitted to and processed by the VICS centre. The VICS then provides real-time information on congestion, accidents, traffic restrictions, availability of parking spaces, etc. to in-vehicle navigation system (VICS units) via wireless broadcast. To date, about 2.8 million of VICS units have been sold.

15. The private sector also makes use of the information provided by VICS to develop other applications. For example, a Japanese car manufacturer, with other partners such as magazine and yellow pages publishers, have established and operated a mobile network (MONET) system since July 1997. The system uses information from VICS and the in-vehicle navigation unit to provide other information, such as parking guide, locations of hotels, hospitals, police stations, vehicle service shops, petrol filling stations, etc.

16. The telecommunication industry also uses VICS to develop mobile information services. The services provided include transit route and service information, real-time traffic information, route navigation and other locational infotainment. At present, there are at least two service providers serving over 35 million such users in Japan.

17. In Hong Kong, at least 14 companies have expressed interests in the provision of ITS Services and requested the Administration to provide the relevant transport data and data infrastructure. These include two car park operators, two fleet management service companies, four public transport operators, three telecommunication companies, two electronic payment service providers, and one car manufacturing company.

18. The private sector has indicated interest in developing navigation systems, fleet management systems, car park information systems and other transport route and service information and educational infotainment information once the TIS is in place. The Administration will continue to maintain an active dialogue with the different value-added service providers so that the community can reap the maximum benefits from the TIS.

Channels of Dissemination of Information

19. The Administration's objective is to provide as much up-to-date transport information through as many channels as possible.

20. With the establishment of the TIS, the Administration would continue to use TV and radio to provide more accurate, timely and reliable transport information to the public. We will discuss with radio and TV stations the extension of the coverage and allocation of more air-time for providing transport information, in particular during peak hours, to the public. In parallel, we will explore with them the possibility of setting up dedicated channels for disseminating transport information to the public.

21. The Administration will also make all the transport information available on the internet. We will include interactive route guidance function and public transport enquiry service in Transport Department's homepage so that different types of road users could plan their trips before they leave their homes on the basis of up-to-date traffic information.

22. Apart from information provided by the Government, we have also discussed with public transport operators and encouraged them to make use of the TIS to provide information relating to their services to passengers at bus stops, public transport interchanges, railway stations, etc. The franchised bus companies have already started planning for IT facilities at bus stops which are targetted to come on stream from 2002 onwards.

23. According to overseas experience, telecommunication service providers could facilitate the provision of transport information. In Hong Kong, three telecommunication companies have already expressed interest in the provision of transport information as part of their service package for their users. Road users could enquire about the real-time traffic conditions at specific locations, the public transport services they could take for specific destinations, and other personalised services.

24. Car manufacturers could also install in-vehicle navigation unit in their vehicles. Through connection with the TIS, the in-vehicle navigation unit could perform different functions ranging from simple route guidance to auto-navigation.

25. The Administration would also work together with the Hong Kong Tourism Board, hotels, public transport operators to provide information kiosks at shopping malls, tourist spots and public transport interchanges where the public could have access to the TIS and enquire about transport information and other locational infotainment.

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