DELIVERING INTEGRATED TRANSPORT MODES AND SERVICES TO CUSTOMERS

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STRATEGIC THEME B

INTRODUCTORY REPORT

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OUTLINE

Until now, the roads have supported the economic and social development in many of the world's countries. However, with the spread of vehicles, problems such as traffic jams, road traffic accidents and the environment have become apparent. In order to deal with these problems, and to provide better traffic services, various efforts are being made globally.

STB's strategy theme is "Improving provision of services", which aims to stimulate the improvement of services provided to regional culture through road management improvements, the integration of other means of transport, desirable management forms and customer views. Road management mainly consists of service providers who consider the road traffic network of customers as road users. Under STB, 5 technical committees are in pursuit of the important problems to provide services.

The STB SD session is a debate on how to best apply effort to "provide services to customers who mutually interact with traffic modes". For this session, 9 countries submitted a national report which introduced the efforts being made by each country. We would like to extend our gratitude to each of the 9 participating countries.

The measures handled in the national reports were classed into 2 main groups; "Integration of other traffic means (Intermodal)" and "road congestion countermeasures".

In many countries, attention has increasingly become focused upon traffic which mutually interacts with other modes due to the increasing problems of congestion and the environment that come with more road traffic. Furthermore, in response to the global financial crisis existent traffic services have begun to convert to traffic services which interact mutually with traffic means.

There is a limit to the maintenance of the road infrastructure, and so that many countries can operate their existing road networks at maximum efficiency, they are making efforts to use innovative anti-congestion measures, such as ITS. Also, each country is making various efforts to provide better road traffic services to regional cultures as road user customers.

In this session, we would like to consider, with the audience, how best to approach these 2 countermeasure problems in the future.

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1. INTRODUCTION

1.1. Traffic that mutually interacts with traffic modes and provides better customer service

For many countries in the world, road traffic is mainly passenger and logistics and is an essential role in developing the economy and culture. Especially, developing countries have high expectations for road infrastructure maintenance for economic growth. Also, since motorization has rapidly developed, the maintenance of road infrastructure in necessary in order to cope with mobility needs.

However, with the increase of vehicles, problems including congestion, accidents and the environment occur and each country continues to cooperate toward a solution. As the quantitative expansion of road infrastructure cannot continue for eternity, cooperation is being made to get an appropriate balance between controlling vehicle traffic and transportation assignment.

In countries with road networks in the “growth” stage, the focus has been placed on road network maintenance which follows the economic development. In response to this, as the road network “matures”, the focus shifts to achieving an appropriate balance of transportation distribution and controls vehicle traffic. In order to do this, as well as developing better traffic that interacts with different modes, intermodal traffic, improving the customer services has become a problem.

The conditions are different for each country, but in order to sustain development each country is aware that traffic which interacts with different modes is an important target.

This report, while regulating the countermeasure problems handled in the national report for each country, recognises the efforts made by each country to provide integrated transport and customer service.

1.2. Main Countermeasures

Each country in the world has the common problems of congestion, safety and the environment as road traffic increases with economic and social development. Also, awareness has been raised concerning the recent global warming problem and facing the economic crisis, the road administration of each country are aiming to execute better traffic which interacts with different modes and better customer service.

In order to do this, each country is proceeding with information distribution and traffic managements in order to support transportation selection and the spread of the interaction of road traffic for people and freight with other transportation methods, namely intermodal transport. Also, for congestion in cities, systems such as ITS are fully used and new technology for distributing information directly to vehicles or users are being developed.

The main countermeasures handled by the national reports are classed in to the 2 main groups mentioned previously; “intermodal” and “anti-congestion”.

This report focuses on these 2 main problems, and organizes the efforts made by each country, centred on the innovative efforts made towards intermodal people and freight transport and innovative methods for anti-congestion in cities.

2. INNOVATIVE INTERMODAL: PEOPLE AND FREIGHT

Under financial restrictions, in order to raise the necessary funds for traffic measures, various methods are needed. The road administrations of each country carry out infrastructure maintenance activities such as ensuring specific revenue sources, introducing PPP or supporting international organizations such as the EU and also plan for introducing incentives to spread intermodal transport and take both hard and soft measures.

Congestion in big cities is a common global problem. In order to develop sustainable transport, each country is not only eliminating road traffic bottlenecks but they are putting effort into various measures to strike an appropriate balance of transportation and to control vehicle traffic.

2.1. Intermodal promotion under severe funding

With the recent economic crisis as a background, each country is planning traffic infrastructure maintenance and intermodal promotion under severe financial restrictions. In order to fill the gap in public funding, many countries are facilitating the introduction of the private sector through PPP, and support from international organizations such as the EU are an important source of funding for middle eastern countries.

Rumania, upon entering the EU in 2007, was required to accept the general EU law called the Community Acquis and to promote rail and road maintenance and traffic measures. Recently the Middle Eastern countries have undergone rapid economic growth and become emerging markets in which high standard investments from various global businesses are expected through the EU.

Road financing is secured by funds gained via road funds gathered through fuel tax and Vignettes yet this is not sufficient. Because of this, monetary aid or loans have been received from the EU or other international financial organizations and road maintenance has proceeded. Furthermore, governments are actively working to raise money through PPP in order to proceed with the development of trunk roads.

The state of transport networks is positioned at an important node in the economic exchange geographically in Europe, and since the investment and maintenance for the transport infrastructure has so far been insufficient, said infrastructure does not meet the demands of the market economy. Poor expressway and trunk road capacity are examples of individual transportation management which is at an insufficient level. Strengthening these transport networks is a priority item for intermodal transport.

In Hungary, which neighbours Rumania, in order to develop intermodal transport, progress is being made, with a limited budget, in both measures and support such as financial aid and incentives through subsidies.

There are 3 types of financial aid through subsidies.

- Aid to Ro-La service budget (car train)
- Aid to intermodal logistics centres (purchase of machinery and equipment, expanding the industrial railways, expansion of terminals)
- Aid for managing ports or industrial railways

Intermodal logistics centres are being supported by the EU. Also, in order to receive the subsidies changing transportation methods, such as from road to rail and ship, has become compulsory.

Policy support is not yet operating distance charges for roads, but measures to exempt driving restrictions on national holidays and weekends within 70km of logistics centres is being run for only heavy vehicles transporting composite loads.

2.2. Anti-congestion measures in large cities

The state of congestion in the big cities in each country is severe, and since this leads to socio-economic losses, it has become an urgent issue to be addressed. Also from the viewpoint of accident and environmental problems, spreading the use of public transport, bicycles and walking and getting an appropriate balance with transportation is important. To this end, each country is making efforts towards various policies to spread the use of public transport or to provide nodes which are planned to give seamless connection between vehicles and public transport. However, the road network provided is at an insufficient level so it is necessary to strengthen road capacity.

The appropriate distribution of transportation

In Japan, especially for people, historically the railroad maintenance has taken priority over the roads and suburban development also followed the rails so that public transport nets, such as buses, were provided centred on a railway station. Then station rotaries became an important transport node. Also, the usage in the centre of big cities is high density and the high distribution rate of public transportation is ongoing.

However, with the progress of motorization in rural areas, the distribution rate of public transportation has started to decrease. Especially, the number of passengers on buses, which is an important public transport method, is decreasing yearly. Then, to break the vicious circle of congestion from the decrease of bus users, measures are being put in use including road improvement, elimination of through traffic by maintaining bypasses, and the removal of level-crossings through the continuous grade separation project.

With the increased awareness towards global warming measures as a background, the number of cities examining the introduction of LRT is increasing. For example, in Japan in order to increase the distance between vehicles, many of the discontinued tram lines have been making a comeback in recent years. Local governments are spreading LTR introduction since they receive state funding for such projects.

However, central and eastern European countries have seen a marked increase in vehicle ownership due to motorization and congestion has become a serious problem.

As an example, in Bucharest, the capitol of Rumania, vehicle ownership increased by 14% in 1 year. From this, reduced transfer times or Park & ride points to promote public transportation such as subways, bus, trolleybus, tram, light rail and mini-bus, as well as providing nodes for mutual transfer between subways, trolleybus, trams and light rail, providing information services to users or the sale of tickets that can be used on multiple-transports are being introduced all in order to control the increase in vehicle traffic.

In Hungary, vehicle ownership is steadily increasing yet in addition to generous discounts on public transport, networks are being fully utilized and the public transport distribution rate is high. However, due to the increase of vehicle ownership and the increasing mobility of

the populace, public transport points are decreasing. From this, policies to improve the convenience of public transportation are being made which include financial support for fare discounts, fare and timetable integration of differing public transport, maintenance of P+R and B+R facilities and bus lanes, disabled access, and providing bus services to under populated areas.

Promoting the use of non-motorized transportation

To realize green city traffic and to get an appropriate balance of transportation, promoting non-motorised system mobility and, for example, making efforts to show that using bicycles is safe and convenient, or promoting bicycle rental has become an important problem. The success of bicycle rental in Paris has given us suggestions for sustainable transport.

Also, in advanced countries with rapidly advancing aged populations, maintaining walkways with a universal design so that pedestrians can move safely, securely and comfortably is imperative.

The necessity of a generalized traffic policy and organization

In big cities, due to the large amount of land acquisition and restraints, there is a limit to the cost burdens, such as rising construction costs and therefore there is a limit to further maintenance of the road infrastructure. Because of this, measures to control the transport demand management of vehicle transport capacity or general transportation which includes sharing with other transportation is important. In order to do this, it is necessary to form an organizational structure for intermodal planning or budget distribution.

As general traffic measures, Japan formulated the “General Plan for Urban Transport Facilitation” and in addition to means for expanding traffic capacity efforts are being made on general measures to combine transport demand management and intermodal means.

Austria’s ASFINAG promotes park & ride, information provision for intermodal transport and infrastructure maintenance based on a strategy plan which was concluded between other transportation as a means for integrated traffic.

Also, for the efforts towards traffic problems in big cities, establishing organization systems to manage the planned measures is important. For example, in main cities, the necessity of forming organizations with the ability to make traffic plans and manage the traffic means has been pointed out.

2.3. Efforts towards intermodal logistics

Until now, each form of transport, such as roads, rail and ports were responsible for their own logistics. However, in order to respond to the increasing problem of global warming or the needs of business streamlining, combining the advantages of each transport and proceeding with intermodal transportation with the aim of efficient logistics is required. For example, Europe is continuing with the introduction of a system in which containers are gathered at a cargo terminal by truck, transferred to a freight train and transported long distance, and has piggyback transport in which the truck is loaded on the rail car and taken as is.

Promotion of multimodal transport

In Austria, as a method to eliminate bottlenecks in road traffic, plans to use rail transport of truck loads (car trains) called a “Rolling Road” as a road bypass are being made.

In Cuba, efforts to use intermodal container freight transports are being made. With the internal economic growth, the amount of cargo arriving at ports has greatly increased and since the port facilities are not being optimally used the amount of retained cargo at the main ports has bloomed. A result of this is that the logistic cycle agreement with shippers cannot be kept and causes economic losses.
From this, with the aim of high standard service provision, efforts are being put into prediction evaluation for infrastructure maintenance, the introduction of national level container handling, the formation of a container transport company, examination of unutilized intermodal transport technologies and the improvement of operation methods for rail transport (cooperative transport of trucks and rail, low-beds and double decks, etc.). For sustainable development, a highly effective and efficient cargo process is required that is safe and reliable from the development of tracking and management systems for general container users.

Hungarian cargo transporters, in addition to cargo transport planning from the establishment of intermodal logistic centres which make the most of geographical positioning in Eastern Europe, are proceeding with becoming intermodal through the elimination of bottlenecks, short time requirements by making regions accessible, updating vehicles or terminal facilities and introducing/operating information provision or traffic control systems which utilize ITS.

Research into sustainable cargo transport

Recently in Switzerland, tourist transport has increased drastically on roads and rail than the need for cargo transport and between 2002 and 2030 is expected to rise by 32% - 78%. The strong increase in tourist transport compared to cargo transport is not considered to be a mistake, and it is necessary to examine how to maintain sustainable economic competitiveness.

In dealing with this problem, a research project formed from 10sub-projects has been made and is proceeding which has the target of making specific and realistic proposals for sustainable cargo transport. This research which began in autumn of 2008 and cost over 2million Swiss francs, is expected to close its final report by around December 2012.

2.4. General efforts for modernization

To provide an effective traffic service, for any country in the world, it is necessary to have socio-economic support. Especially in developing countries, in response to increasing traffic requirements, the management of individual transport infrastructure is essential. Furthermore, maintaining the infrastructure in a good condition and promoting the transport infrastructure is required to provide good service to the users.

In Mexico, infrastructure maintenance of communication, rail, ports, roads and airports, etc is considered essential for the development of the country. Based on the 2007-2012 infrastructure management plan, which aims to increase the public standard of living, infrastructure management is progressing which uses a budget historically unseen in Mexico before now. So that road users can enjoy integrated normalized high standard and good quality services, a general program is in effect to modernize the road network.

This general program includes an information management system, a geographical information system, multi-year management contracts, road bridge monitoring and maintenance, the use of ITS and a road construction program.

The information management system is a plan to generally run the management of national roads. External services aimed at road users are to provide information relating to the road project as well as various projects.

The communication and transport ministry proposed introducing the multi-year contracts for basic road network management in order to reduce management costs and improve service. This contract, run by all management operations and is aimed at basic road networks, is evaluated every 5 to 10 years and follows established management standards.

Also, in order to increase the lifetime and safety of road bridges and tunnels and to plan for efficient management fees, real-time remote monitoring which uses sensor and communication information systems has begun and plans to install these devices on existing bridges have been made.

3. INNOVATIONS FOR ANTI-CONGESTION MEASURES

Since road infrastructure management has a limit, many countries are making efforts to modernize the traffic services or upgrade anti-congestion measures utilizing ITS in order to get the maximum efficiency from existing road systems as well as developing intermodal transport. Also, under severe economic conditions, the various ideas are used efficiently with a limited budget and efforts are being made to provide a better road traffic service.

3.1. Social innovations such as ITS

As an innovative way to tackle anti-congestion measures, the national report has made it clear that efforts are being made to raise customer satisfaction in cases of providing information allowing for the appropriate selection of transportation using ITS, getting recognition from communities and customers and user opinions which are reflected in the services.

Information services using ITS

In Austria, from the viewpoint of providing integrated services, road users are provided with an integrated traffic information service (WEB, mobile terminals) and the ÖBB (Austrian rail) or ITS Vienna Region project team, radio stations, automobile associations and each region cooperate with each other, and from these services the road users can obtain the latest high quality information.

Also, the European Commission is funding a project to develop the COOPERS system which allows information communication through in-car devices and road side sensors even installed on financially difficult rural roads.

Furthermore, to avoid delays on some sections of road, detour choices are being inspected and evaluated based on standards which consider time, driving cost, traffic capacity and the environment, and the necessary infrastructure management is advancing at route intersections. These are also advancing for cross-border routes.

Even in Spain, efforts are being made to provide an information service which uses ITS. Teleroute (a road information communication system controlled by the expressway control centre) uses ITS as an information collection and distribution system, integrates information

platforms and adds road information platforms such as CCTV in an effort to make various improvements.

In Japan, as the internet and mobile phones become more commonplace, a bus location system which provided information on the bus operation conditions in real time to the user through these media. Bus operation is affected by road situations and the weather and the inability to get the correct bus arrival times is one form of user dissatisfaction. Here, through the introduction of the bus location system, current position information on the bus can be provided, and the service standards improve.

Also, Japanese expressway companies provide congestion prediction based on past and real-time road conditions as anti-congestion measure and a user service. Through this, driver departure times or route changes are being promoted in other means of transport.

Furthermore, traffic information providers in the private sector which use congestion information provided by the road administrators have become substantial. For example, there is a general navigation service which can search for an optimal route from various modes of transport such as foot, train, car, bus and plane, and which even provides rich real-time information on weather and parking availability.

Efforts to improve user satisfaction

In the United Kingdom, the administrative agencies of England, Scotland, Wales and Northern Ireland have made substantial road measures. In each region, the road user involvement in decision making is reflected in user comments on the provided services making user correspondence extremely important. By having users be involved in the planning and management, improvements for higher service standards, improved user satisfaction or network efficiency can be planned for.

In England, optimal improvement work or service improvement due to user satisfaction reviews and other such operational efficiency has been achieved. Also, service improvement means are in operation which uses user opinion polls and user voices from user-guide networks.

In Scotland, a comprehensive user information communication response system is being built which supports the traffic information or management systems. This is formed of a web service or accident response service, user phone response service etc.

Northern Ireland is improving the user desk of the formation of a system which allows the electronic recording or observation of road works in order to give better response to user confusion caused by the road works.

In Wales, a road user information service on the web which uses ITS is provided which gives advice on maps and travel time, CO_2 emission calculations and road work information, for example.

Also Spain has the yearly problem in the summer holiday season of vehicle traffic consisting of 2.5 million people in 0.6 million cars in the border ports from France, and is trying to minimize this problem with traffic by forming a committee of representatives from the transport department, civil defence department, the Ministry of public works, the Health and Social policy defence department and from each municipality.

3.2. Efficient use of funds

As mentioned in part 2, due to the recent economic crisis, each country is facing severe financial conditions. Also, EU member states are restricting the government's budget deficit. Due to this, public-private partnerships are being promoted as a means to make road infrastructure management efficient, and means to utilize private sector potential are being made the world over. For example, in Spain large-scale infrastructure investment plans are being formulated and plans are in development to raise funds through public-private partnerships as well as maintenance to postpone the government's financial burden. From this, intergenerational equity is met which reaps the benefits of the infrastructure.

Furthermore, Spain is lengthening expressways by 11000km yet in 2010, 3100km are being surveyed and 1300km are under construction. These roads are being examined based on high-level service standards which include safety as well as comfort. However because of the huge construction costs per km, and without losing service quality, construction costs are restricted from various means such as minimizing construction or tunnel extensions, and are planned to efficiently use public funding.

3.3. General efforts for modernization

For road infrastructure at an insufficient level, network construction and road capacity strengthening are top priority problems. However, continued maintenance of the road infrastructure in the future is difficult. Then, by using innovative technology such as ITS, improving the safety, efficiency and competitiveness of provided services, and modernizing traffic systems is necessary.

In Mexico, ITS utilization is still in early stages and has potential for development in the future. Recently, efforts are being made on a national strategic plan, maintaining the standards and rules of ITS, and mutual operation or integration of systems in order to plan, maintain and operate ITS utilization. Also, efforts are in progress to improve ETC modernization and to construct a user information system which provides road users with information such as road traffic conditions, the weather, accidents and maintenance and closures.

Hereafter, especially for developing countries, in addition to basic infrastructure maintenance, the modernization of traffic systems using ITS and improving the quality of services provided to customers is required.

REFERENCE MATERIAL

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CONCLUSION

Road traffic has clearly been supported by global economic growth, yet with this growth congestion and the environment have become problems. Also, the recent global depression from the economic crisis has put restrictions on road network expansion and it is necessary to exert efficient management to maximize the functions of the road networks. These problems are considered to be numerous depending on the geographical conditions, economic conditions, the level of development and infrastructure maintenance conditions of a country.

This session, while grasping the difference in national conditions, has deepened the useful knowledge on matters such as the 2 measures of “intermodal” and “anti-congestion" means, how each country is employing integrated means of transportation to improve road user services, how user needs are being met to increase user convenience, and how innovative technologies are being introduced to meet such needs, how is this being employed under limited budget constraints and furthermore how are future plans being drawn up.