

# Intelligent Transportation Systems for Sustainable Development:

An Emerging Trend in ICT Policy and Practice in the Asia-Pacific Region

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# 01 BACKGROUND : THE BENEFITS OF ITS

## Trends in ITS Definition

### ✓ Adopting ITS as an Efficient Transportation Solution

ITS includes the use of ICT for rail, water and air transport and navigation devices.

### ✓ No Single or Unitary ITS Definition

There is no unified definition of ITS between institutions and regions.

- Leading ITS countries : vehicle safety and efficiency
- Later ITS adopters : mitigation of traffic congestion

### ✓ The Co-operative ITS Paradigm

C-ITS ,extension of conventional ITS, betters comfort and safety through the real-time information from roads and other vehicles.

## Impacts of ITS Implementation

### ✓ Improving Traffic Efficiency and Responsiveness to Congestion Problems

ITS services lighten congestion and shorten the travel time. With ITS, public transportation will become more punctual and reliable.

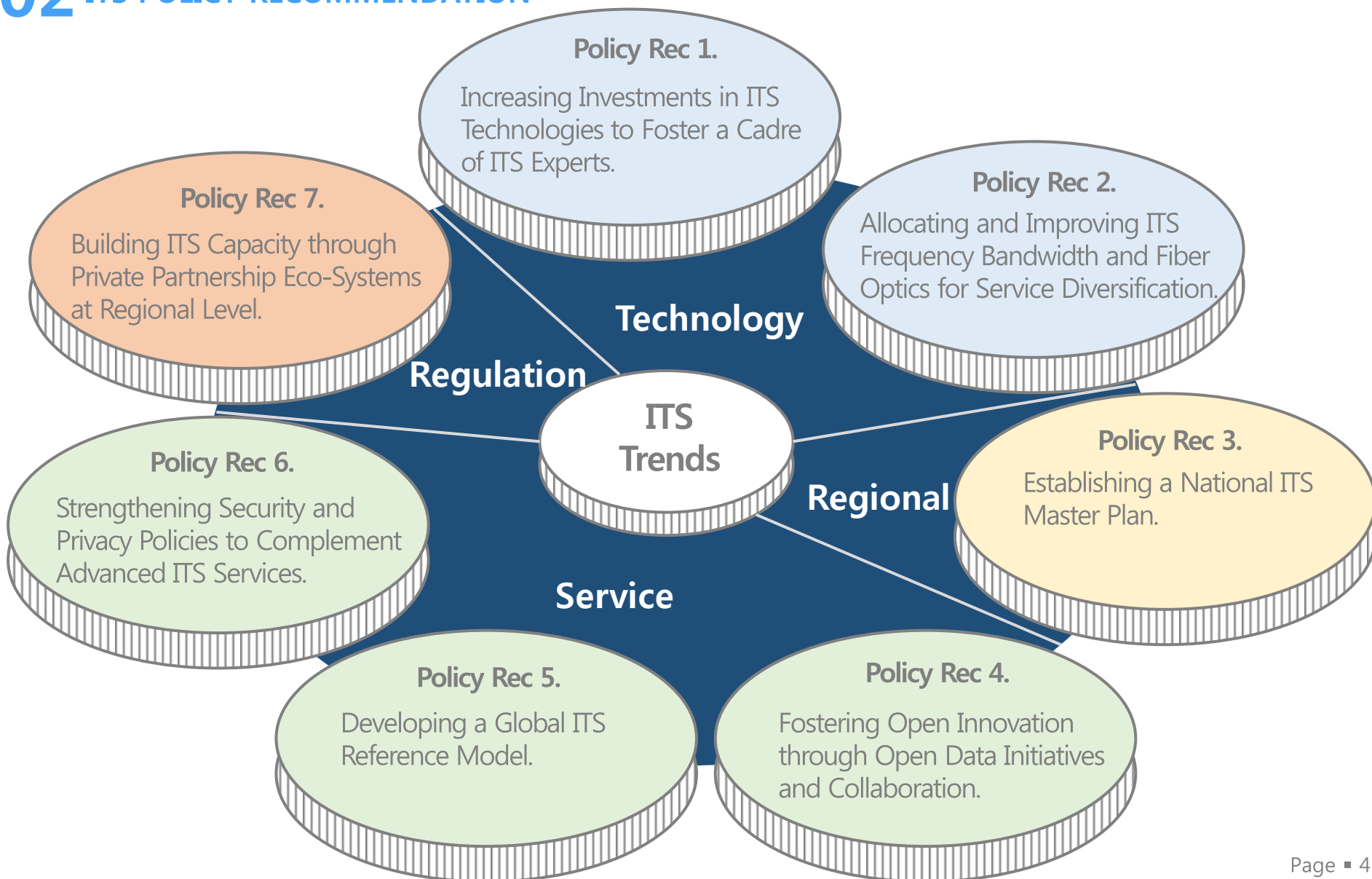
### ✓ Reducing Carbon Emissions through ITS Functionality

ITS can reduce fuel consumption and Green House Gases emission, easing traffic and preventing motor vehicles from idling.

### ✓ Economic Value of ITS Industries

Delivering real-time information, ITS brings economic benefit from improving the efficiency of moving people and freight through the use of installed-base infrastructure and transportation systems.

## 02 ITS POLICY RECOMMENDATION



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### Technology - Policy Rec 1.

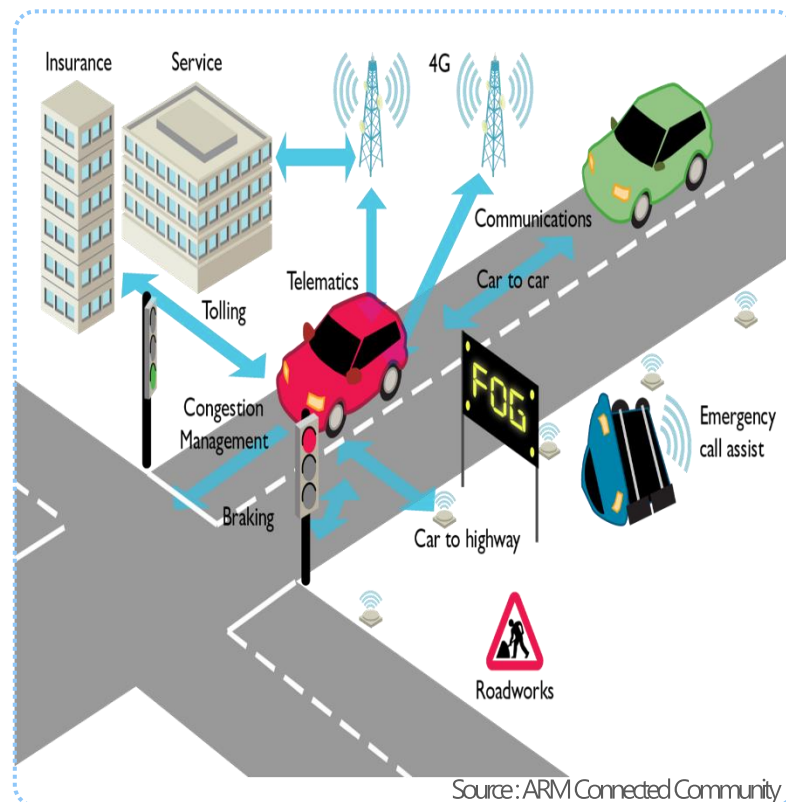
## Increasing Investments in ITS Technologies to Foster a Cadre of ITS Experts.

### ITS Trends

- ✓ Most leading ITS countries investing on V2X technologies prioritize passenger safety above traffic flow.
- ✓ A recent survey compares countries in terms of the number of original technologies and patents for ITS and indicates Japan, the U.S. and Germany as the top-three players.

Ex) The United States has put \$77 million into multimodal research related to V2X technologies which comprises \$49 million.

- ✓ Late-starters in Asia should require assistance in developing ITS innovation capabilities and ITS experts.



Source: ARM Connected Community

## 02 ITS POLICY RECOMMENDATION

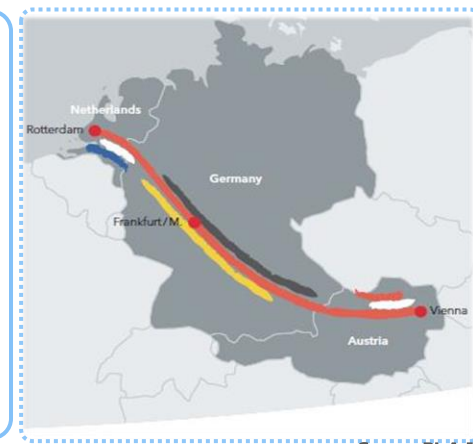


### Technology - Policy Rec 2.

## Allocating and Improving ITS Frequency Bandwidth and Fiber Optics for Service Diversification.

### ITS Trends

- ✓ The development of a single frequency is hampered as each country has a different ITS frequent range.
- ✓ Due to a spectrum of data sources, ITS demands more network bandwidth for ever-increasing data rates.
- ✓ Increasing frequency interruption between ITS facilities calls for the allocation of standardized frequencies.
- ✓ Installing fiber optics for traffic aggregation will promote ITS and interconnectivity between countries.



Source: BVM

### Best Practice

- ✓ Members of the EU cooperates inter-regionally to make C-ITS live in Rotterdam-Frankfurt-Vienna in 2015. This comprises a Roadworks Warning (RWW) and a Probe Vehicle Data (PVD) using a short range communication.
- ✓ ESCAP can play a key role in promoting harmonization and standardization of frequencies and policies related to fiber optics installation in Asia-Pacific region.

## 02 ITS POLICY RECOMMENDATION



Regulation - Policy Rec 3.

### Establishing a National ITS Master Plan

#### ITS Trends

- ✓ A need for ITS planning at a national level, setting a holistic view of the specific ITS development.
- ✓ ITS master plan will secure the alignment and interconnectivity of ITS systems based on government cooperation, detailed principle and guideline.
- ✓ The scope of ITS implementation can be varied across different regions.
- ✓ The relevant mater plan guidance will be useful from ITS Asia-pacific.
  - Basic Principle
  - Traffic Status
  - Outstanding issues
  - Issue-specific targets
  - Means and technologies for achieving targets
  - Implementation systems (Planning proposals and implementation organizations) & capacity building
  - Roadmap (a schedule for achieving targets)
  - Updated plans and processes

# 02 ITS POLICY RECOMMENDATION

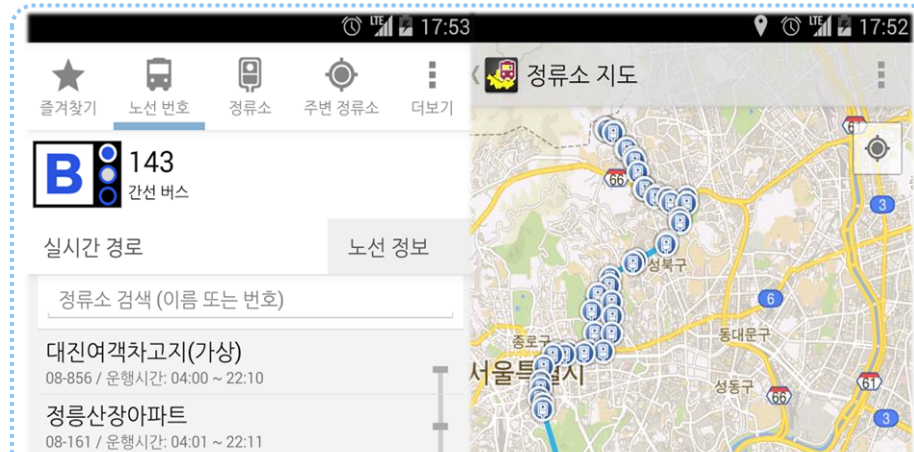


Service - Policy Rec 4.

## Fostering Open Innovation through Open Data Initiatives and Collaboration

### ITS Trends

- ✓ Smart city development and open government have provided an open innovation platform.
- ✓ A recent open data movement in Europe, U.S, and Japan as a business platform for a new ITS service.
- ✓ Open participation for service developments will build up ITS capacity and better analyze patterns of customer action using big data.
- ✓ With the services created countries will be able to satisfy



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