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Development of ITS activities in Thailand

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Presentation Outline

- About Thailand and Bangkok
- Current Status in developing and deploying ITS in Thailand
- Current Issues on developing and deploying ITS
- Issues on establishing a National ITS organization
- Example --Thailand

Part I – About Thailand and Bangkok

Introduction

- Thailand = Land of smile
- Economic crisis is just over and need to pick up on development
- Most of investment on transport infrastructure takes place in Bangkok






Big Picture of Thailand's Land Transport

- 39% Energy consumed by transport sector
- Second largest market in 1-ton trucks
- ~~Third largest market in 2-cycle motorcycles~~
- Loss of 9-51 million person-days from air pollution
- 15,176 fatalities and 43,541 casualty (1994)
- 19% of nation's greenhouse gas emission

Country Land Transport

- 50,000 km of national highways
- Approx. 107 billion vehicle-kilometers of travel on national highways* (1999)

* Passenger and Goods excluding motorcycle

Bangkok is still a central concern

- Traffic growth = 6% in the past 7 years*
- The rest of country is around 1-2%
- Figures of modernization and center of the problems
- First place to develop

* Approximate on passenger travel

Bangkok

- The capital of a fast growing country, Thailand
- Greater Bangkok Area = 10 millions
- One of the world's most famous "traffic congestion" places
- Estimated to have 165,400 million bahts (US$ 3.85 billion) loss a year

Bangkok, another megacity

Transport Infrastructure in Bangkok

What exists

Part II - Current status of ITS development and deployment

Current Deployment Status

- Many government offices are involved with transportation (and ITS)
- They plan, develop, and deploy ITS and other IT independently
- Data collection based on questionnaire

Key Transport Agencies

- OTP (Planning and policy office)
- BMA (Bangkok Metropolitan Administration)
- Royal Thai Police (Control/enforcement)
- ETA (Expressway and Rapid Transit)
- DOH (National Highways)
- DLT (Land Transport Regulator)
- BMTA (Bangkok Bus)
- PWT (Public Work and Town Planning)
- SRT (State Railway)
- MOTC (Ministry of Transport and Communication)
- BTSC (Bangkok Skytrain)
- MRTA (Bangkok Subway)
- TAT (Tourist Authority)

Current Deployment Status

- OTP — Traffic Information/Database
  (Planning and policy office)
- BMA — ATC
  (Bangkok Metropolitan Administration)
- Royal Thai Police — CCTV/VMS/ATC
  (Control/enforcement)
- ETA — ETC/IC Card/VMS/CCTV
  (Expressway and Rapid Transit)
- DOH — Actuated traffic control
  (National Highways)
- DLT — n/a
  (Land Transport Regulator)
- BMTA — n/a
  (Bangkok Bus)

Current Deployment Status (cont'd)

- PWT (Public Work) — n/a
- SRT (State Railway) — Train Control/internet
- MOT (Ministry of Transport) — GIS
- BTSC (Bangkok Skytrain) — Ticketing
- MRTA (Bangkok Subway) — n/a
- TAT (Tourist Authority) — n/a

Examples of Current Deployment

ATC (SCOOT)

Examples of Current Deployment

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Examples of Current Deployment

ATC (SCOOT)

Examples of Current Deployment

Traffic Information

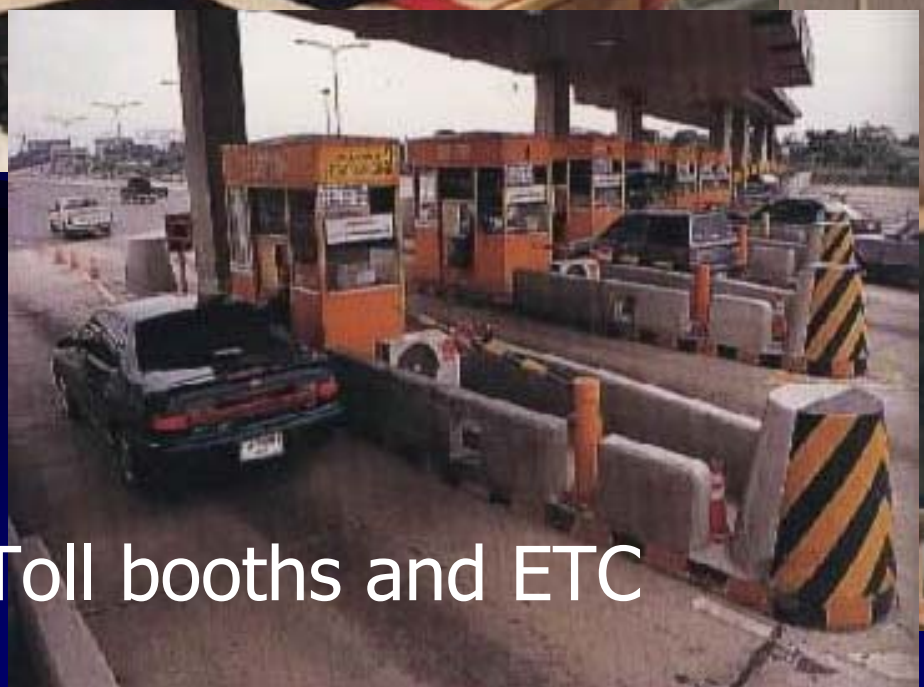
Examples of Current Deployment

ETC

Examples of Current Deployment

Expressway facilities

Expressway Control Center/equipment



Toll booths and ETC

Equipment on roads

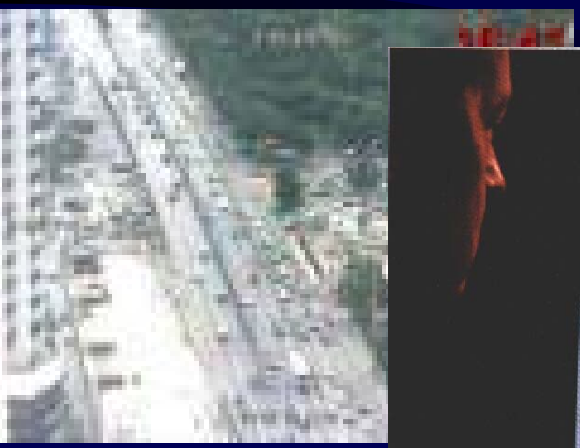
Examples of Current Deployment

Bus Info System (pilot)

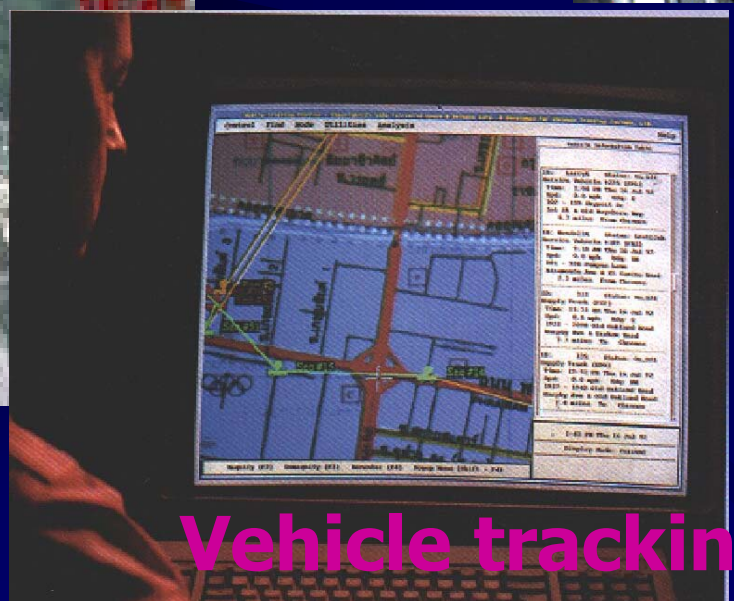
Examples of Current Deployment

Private Development

Traffic Cameras

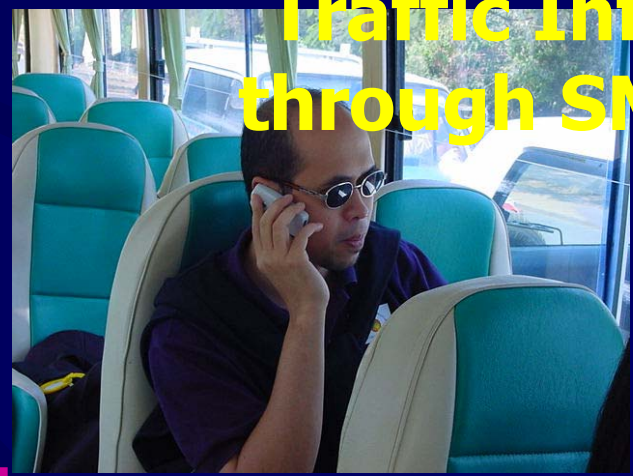


Navigation



Vehicle tracking

Traffic Info through SMS



Planned Projects (5 years)

- OTP — More Traffic/Travel Info. ???
  (Planning and policy office)
- BMA — Expansion of ATC ???
  (Bangkok Metropolitan Administration)
- Royal Thai Police — More VMS / Traffic Info. dissemination
  (Control/enforcement)
  ETA — Smart Card
  (Expressway and Rapid Transit)
- DOH — VMS / Toll collection system
  (National Highways)
- DLT — Information Technology / GIS ???
  (Land Transport Regulator)
- BMTA — GIS / GPS / Route Info. ???
  (Bangkok Bus)

Planned Projects (cont'd)

- PWT — IT/ ATC in Chiangmai ???
  (Public Work and Town Planning)
- SRT — Scheduling/Train control/Traffic control
  (State Railway)
- MOT — GIS based database
  (Ministry of Transport)
- BTSC — Smart Card
  (Bangkok Skytrain)
- MRTA — n/a
  (Bangkok Subway)
- TAT — n/a
  (Tourist Authority)

R&D

- R&D is conducted by universities – research reports/theses
  - Willingness to pay for ATIS (route guidance)
  - User acceptance to APTS (bus travel information)
  - Travel information system
  - Probe Car system
- R&D is conducted by private companies – domestic products
  - GPS based tracking for CVO
  - Navigation with digital maps

Part III --Current issues in developing and deploying ITS

S.W.O.T.

- Strengths
  - Modern technologies offering benefits – Increased Efficiency
  - Add quality and reliability to transport services
  - Increase work productivity
- Weaknesses
  - High investment due to start from scratch
  - Some do not show real benefits at present
  - Require knowledgeable staffs
- Opportunities
  - Further into another advanced stage of transport system
  - Show indirect benefits to other sectors
  - Able to share and connect to other systems
  - Interested by many private sectors
- Threats
  - Technological dependence
  - Require skillful persons or real benefits not accrued
  - Technologies are misused

Key Issues

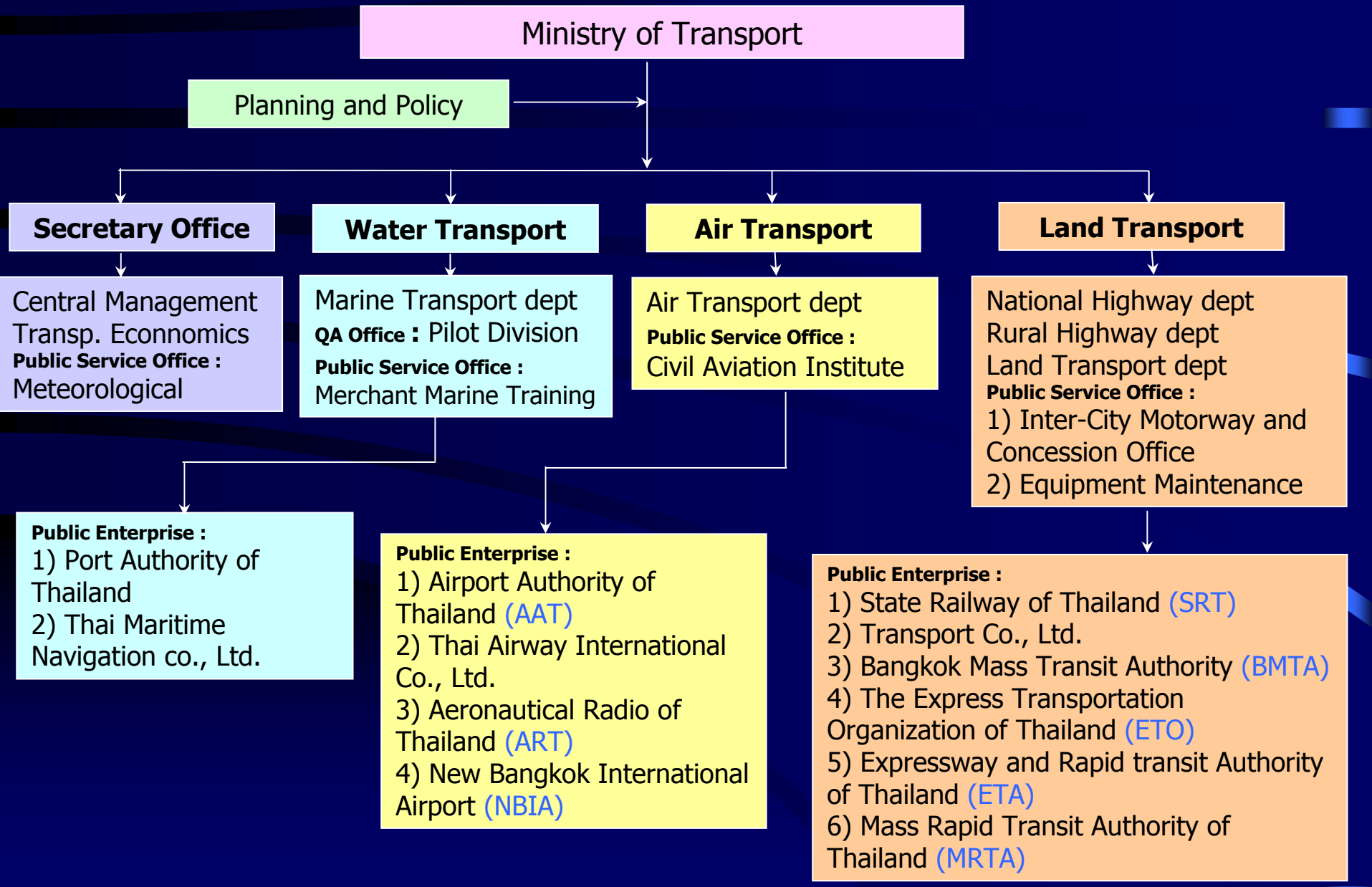
- Many agencies involved in transportation business
- Inter-jurisdiction Loophole
- No direct agency deals with ITS (or even promote ITS)
- High Investment
- Resistance to change/accept new things
- Worry on accept know-how

Transport Administration

- Current Administration involves many offices
  - Ministry of Transport
  - (Ministry of Communication and Information Technology)
  - Ministry of Interior

  And many public enterprises
- More than 10 separated agencies deal with land transport in Bangkok

New Transport Administration



Key Issues

• Many agencies involved in transportation business	• Re-structured administration √
• Inter-jurisdiction Loophole	• No private-public dev. X
• No direct agency deals with ITS (or even promote ITS)	• No "ITS Thailand" X
• High Investment	• N/a
• Resistance to change/accept new things	• R&D, Education and training --- partial
• Worry on accept know-how	• R&D, Education and training --- partial
• Drive from Private sector	• Need partnership X

Possibility on ITS deployment from some specialists' opinions

• Navigation	Less possible
• ETC	Possible but existing not successful
• Asst Safe Drive	Less possible
• Opt. Traffic	Possible
• Eff. Road Man.	Less possible
• Public Transp.	Possible/less possible
• CVO	Possible
• Pedestrian	Less possible
• Emergency Op.	Less possible

Part IV --Issues on establishing National ITS organization

Needs for National ITS organization establishment

Why do we need a national ITS organization?

1. US – IVHS initiatives – to develop and standardize the Road and Vehicle technologies
   - ITS Architecture
2. Japan – VERTIS – to be a point of contact among business units, (academia) and government
   - Bargaining power to the government
   - Unify the direction on development

Needs for National ITS organization establishment (cont'd)

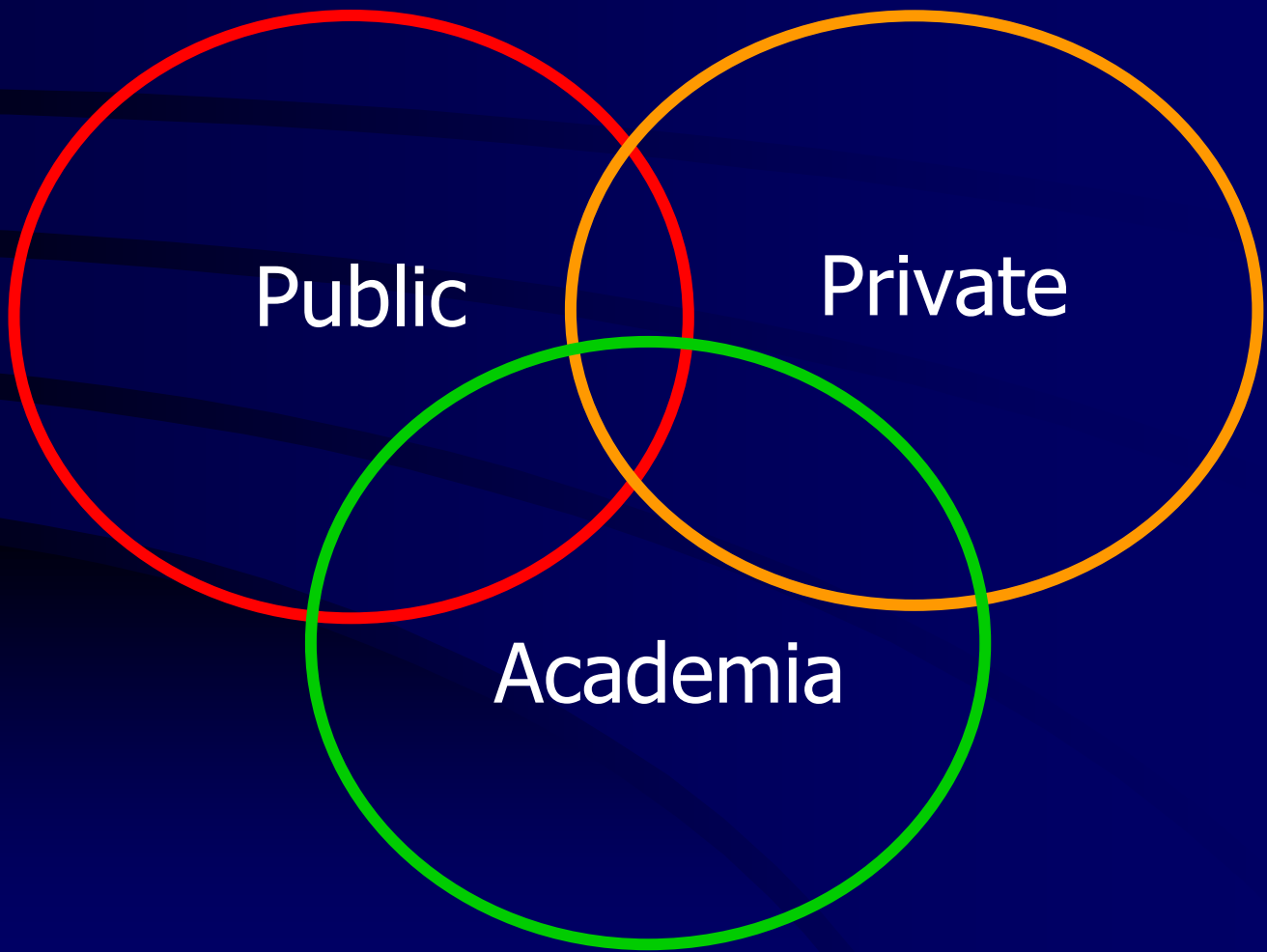
Why do we need a national ITS organization?

3. Europe – ERTICO – point of contact among countries, to collaborate on development of ITS
4. Korea
5. Singapore
6. Taiwan
7. Thailand/Philippines ??????

Countries successful in establishing ITS society must first have strong determination in utilizing advanced technologies in transportation (Public&Private) !!!

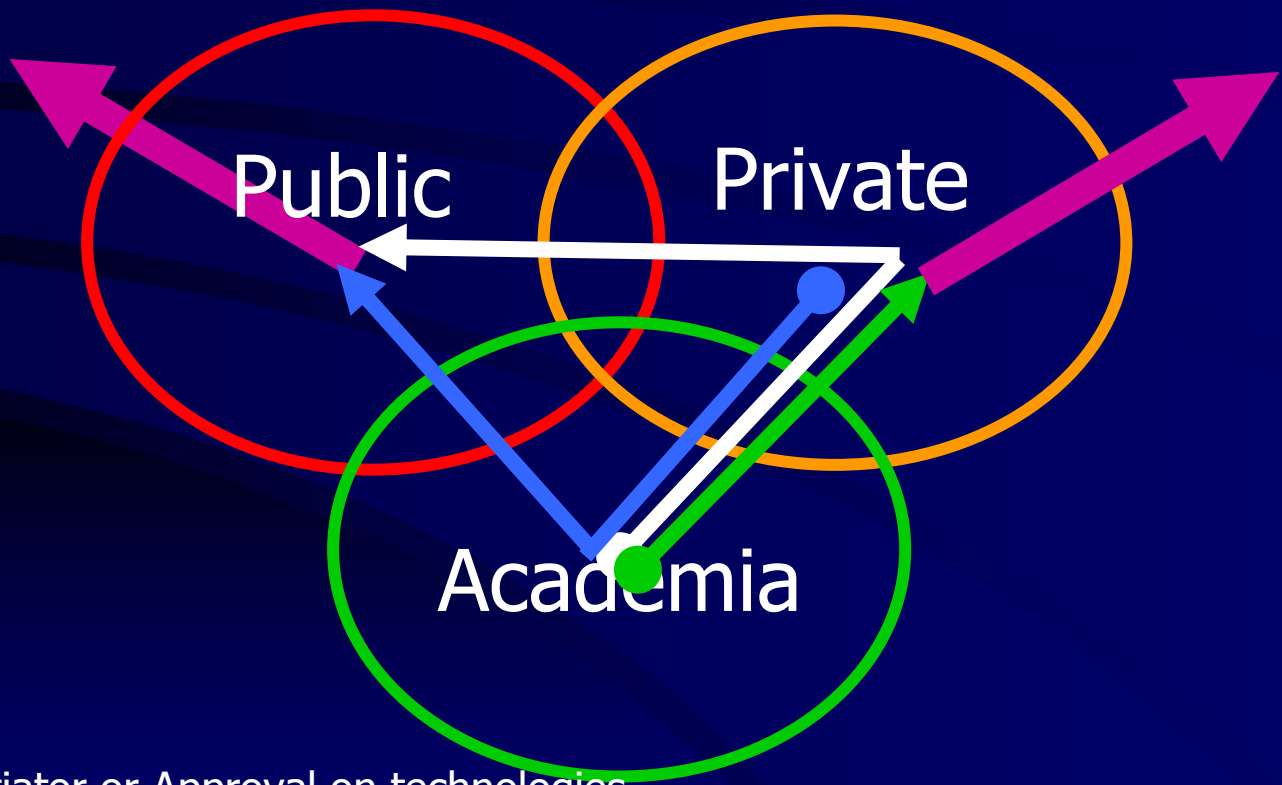
Model on National ITS organization

A non-profit organization



Purpose of ITS organization (1)

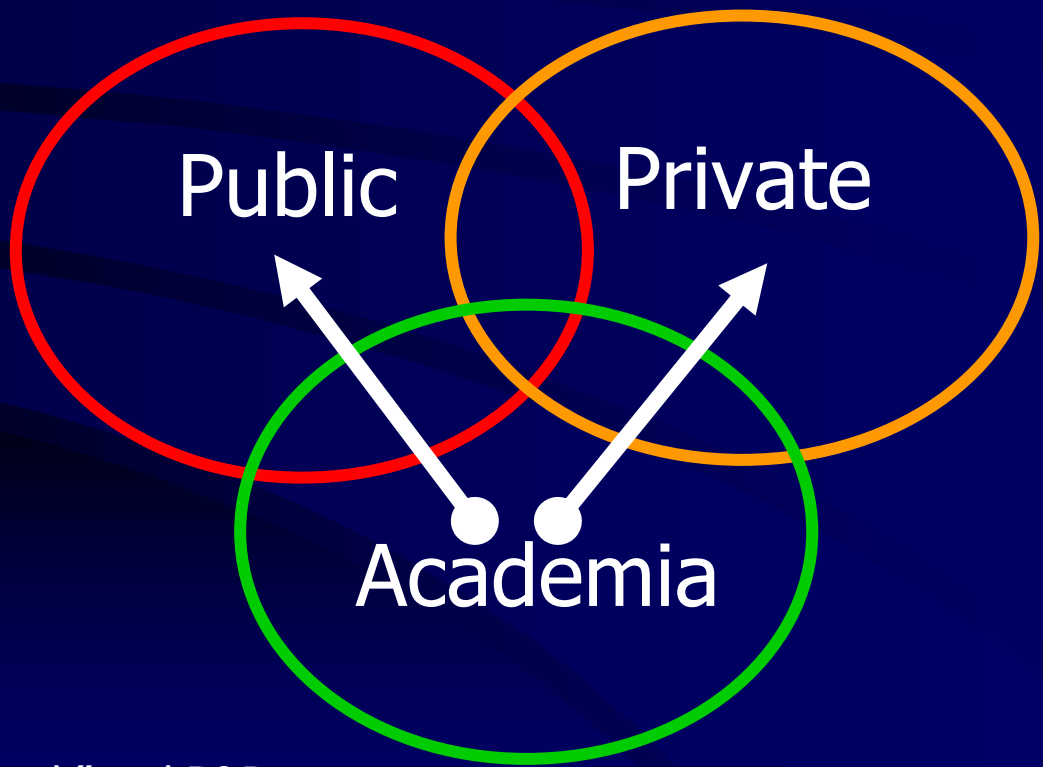
1. To promote the use of advanced technologies in developing transportation in country (private <-acad.->public)



Academia = Initiator or Approval on technologies
Public and Private agency = implementer

Purpose of ITS organization (2)

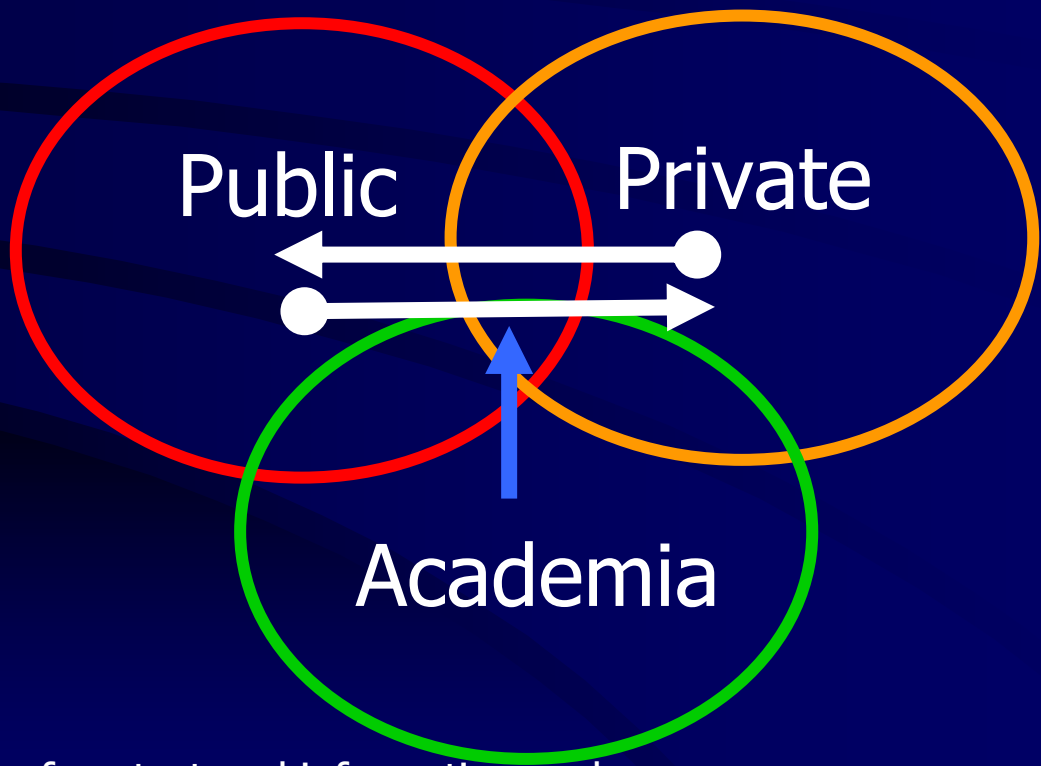
2. To accrue the development of advanced technologies through R&D (acad.->public/private)



Academia = "Think tank" and R&D

Purpose of ITS organization (3)

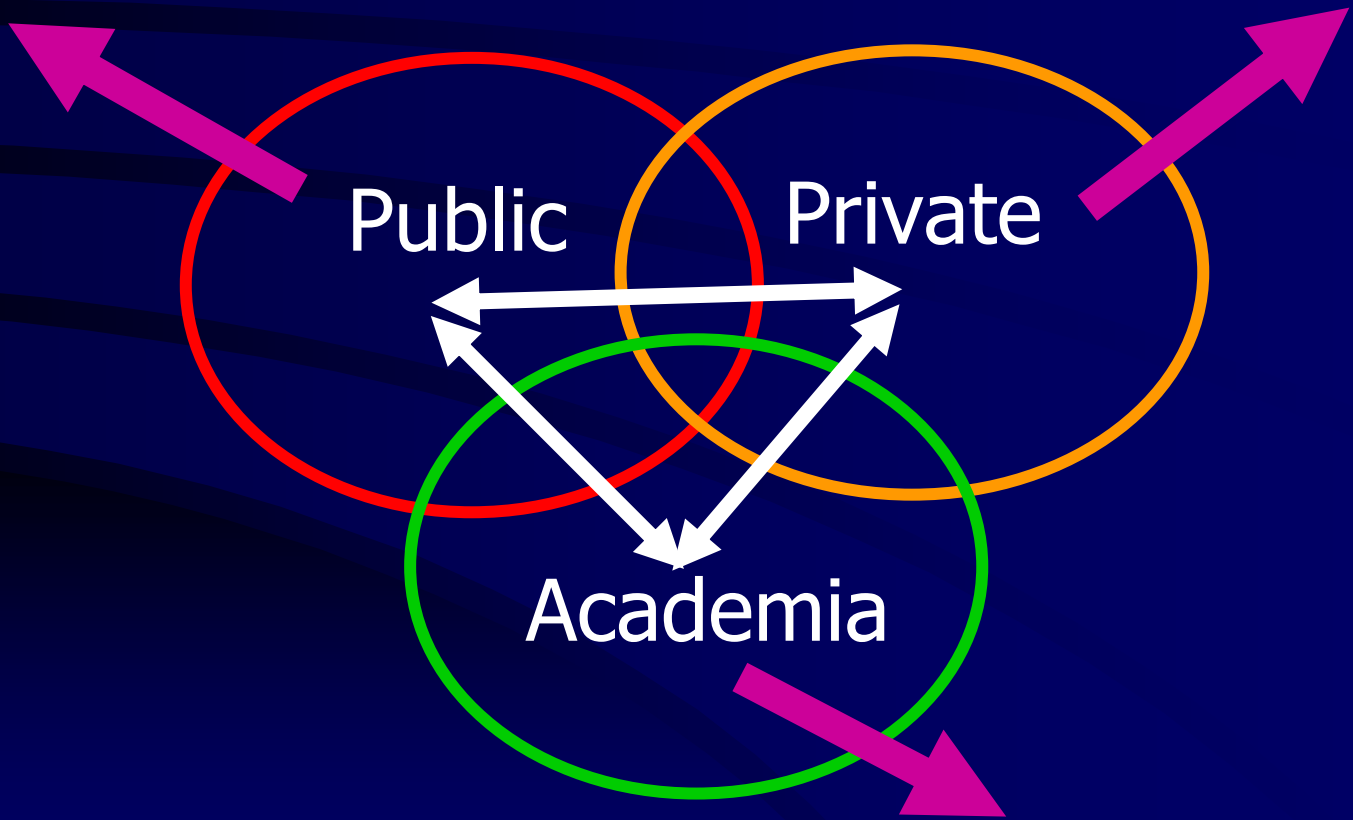
3. To build up the mechanism for communicating between Public and Private sector



ITS organization = Point of contact and information exchange

Purpose of ITS organization (4)

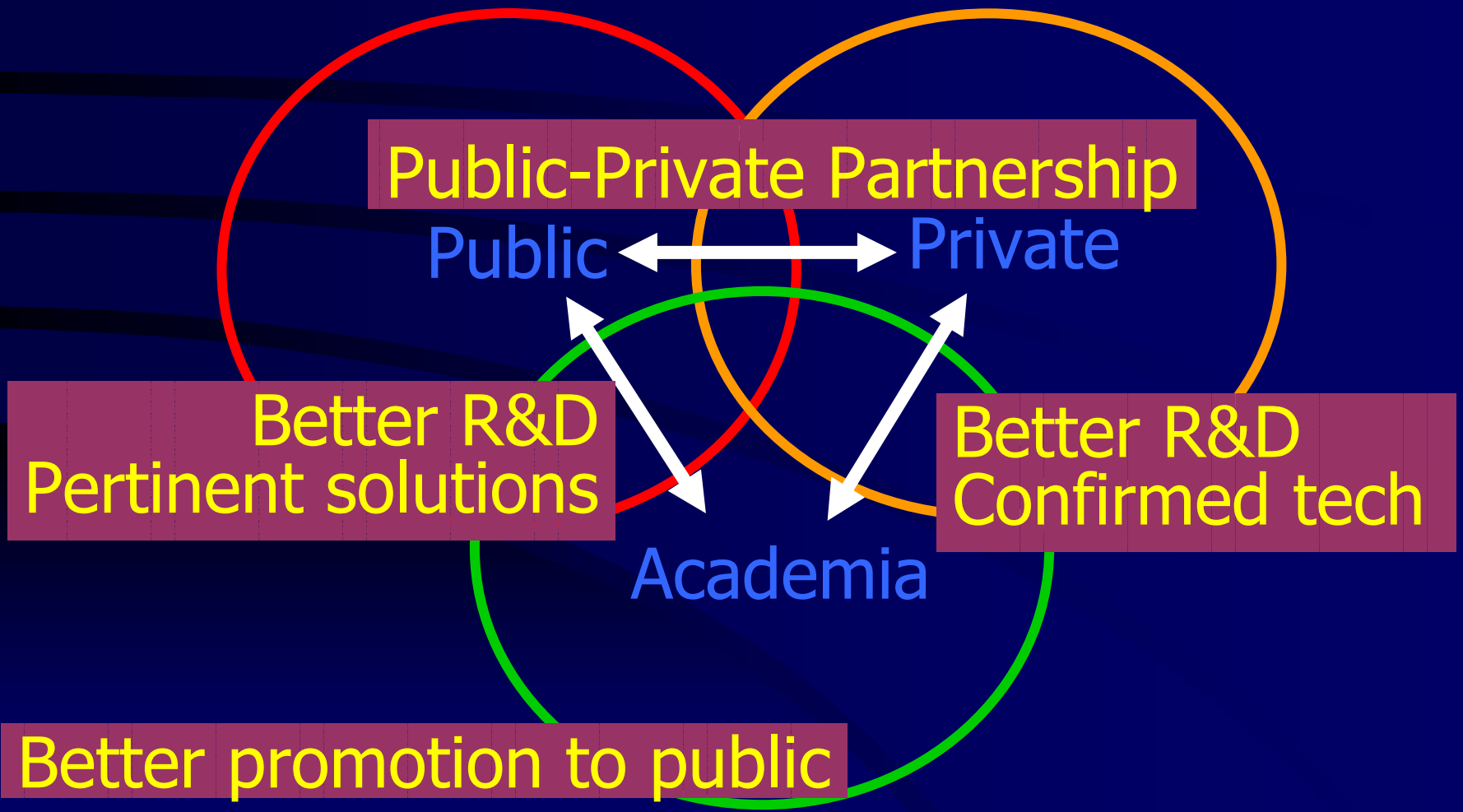
4. Communicate to and Educate Public – promote ITS to gain acceptance from public



Same information is used for communicating to public

Summary -- National ITS organization

A non-profit organization



Who will organize the national ITS organization?

1. Should be a new “neutral” organization
2. If not, can be organized under (Thai case)
    1. Engineering Institute of Thailand
    2. Transportation Society
    3. National Committee on Transportation (or IT)

Who will participate in the ITS organization?

1. Private companies who do business in ITS
   - Do we have a lot of them in the country?
2. Academic
   - For research grant or training?
   - Or contribution to the society?
3. Government Organizations
   - Are they now interested in developing transportation system using ITS?
   - Are they willing to assist the ITS business (in any possible way)?

Potentials on establishing ITS organization

Things to be pondered:

1. Most ITS organizations survive by contribution from members?
   - Will there be enough members to survive?
   - High membership fees = high expectation from business
2. Does the country have policy to advance transportation system by ITS technologies
   - Willing to spend a big budget on ITS?
   - Will help business (by law, promotion, etc)?
   - Can the country develop her own technologies?

Part V – Example -- Thailand

Story on establishing ITS Thailand

1. Encouraged by ITS Japan since 1999
   - Visit, Promote on technical support (as mother organization in the region)
2. Contact to all parties involved
   - Government offices – not interested (some of them have conflicts in authorization on ITS activities and Lack of budget
   - Private companies – uncertain on the benefits they will gain after having ITS Thailand
   - Academic – interested but presently have very small in the number of experts

Story on establishing ITS Thailand (con't)

3. Responsible agency on establishing ITS Thailand
   - TSTS (academic group under EASTS) -- no
   - Engineering Institute of Thailand – may be
   - Private Association – may be but questionable
4. Main Obstacles:
   - No party wants to make commitment – especially government offices since they do not see a clear benefits for them
   - No one wants to take a lead (in responsibility) in establishing ITS Thailand
   - Benefits on having ITS Thailand is not clear
   - Not so many private companies in this business; many of them import technologies from other countries.

Suggested what to do to make a successful ITS Thailand

1. Make a commitment
   - Clear policy statement
   - ITS Master Plan (5-10 years)
   - Secure budget for ITS development
   - Ease difficulties (e.g. regulation)
2. Make a win-win plan
   - Find responsible persons/agency in any activities
   - Describe how to boost local industry associated with ITS – make them profitable

Successful ITS Activities

1. Make ITS visible
2. Know (and understand) partners
3. Plan for co-ordination
4. Put ITS into each agency's responsibility
5. Good co-ordination
6. Make the benefits realized and get more support

Thank you

Additional info./Pix

Facts on Bangkok congestion

- Average residents spend 44 days each year in congestion
- Delay accounts for one-third of its gross potential city product
- Produce unpredictable in travel time by 200%
- Air pollution is 14 times higher than international health standard
- At many locations, noise is higher than 75-80 dB

Public Transport: Buses

Some Actions: Traffic management :ATC

Some Actions: Bus improvement

Some Actions: Rail transport system

An interesting underground rail rapid system

Some Actions: Planning for road network scheme

To reach the Goals:

Ease congestion, improve environment, protect security of public