

# Public Transport Development: Solution towards Energy Efficiency

Over 40% of our fossil fuel resources are utilised in the transportation sector. This includes private vehicles, public transport and other modes of transportation services. In comparison to Japan, Singapore, Europe and United States, we in Malaysia are wasting too much fossil fuel on the transportation sector.

## Sources of Fuel Wastage

Fuel wastage arises from several sources. Firstly, motor vehicle engine efficiency is still far lagging. There is a need to draw up regulations on vehicle engine efficiency and not just the fuel type. The energy efficient labeling for cars and other types of vehicles will assist consumers to make a wise and economic choice in purchasing a product. Such labeling is widely used in Europe. In addition, very old vehicles which are not energy efficient as well as high in emission are still on the road. These vehicles should be replaced with newer models through an effective End of Life Vehicle scheme. Such schemes have been successfully implemented in Japan, United States and Europe. The scheme also assists consumers to own new efficient vehicles easily.

Secondly, our road system efficiency is poor. A poor road system causes traffic congestion and subsequently results in fuel wastage as well as an increase in CO<sub>2</sub> emission. A frequently heard complaint of Malaysian drivers is that they spend far too much time in traffic congestion situations. The road design in terms of turns, 'U' turns, junctions as well as roundabouts needs a revisiting. Effectively, efficiency in fuel consumption can be enhanced through good road design which results in smooth flowing traffic.

Thirdly, lack of public transportation development is seen as a major cause of high usage of private vehicles. Less and less Malaysians opt to take public transport as prevailing public transport services are 'sardine packed'. Well networked, efficient and reasonably priced public transport service is still high on the wish list of the people. Let us revisit some public transportation issues.

## Factors that Deter Public Use of Public Transport:

### Comfortability of Public Transport Vehicles and Services

A consumer would like to experience a comfortable environment while travelling to the required destination. A comfort feeling is

seen as a pull factor. In its absence, it becomes a push factor immediately. Comfortability must be accorded the highest priority in the public transportation industry. Systems that are constantly over-crowded or 'sardine packed' imply inadequacy and insufficiency of services and should be monitored and improved. The public transport operators should also anticipate growth in users.

Ergonomics must be put in place in the design of vehicle as well as stations that play a role in shaping the industry. Such a system must also be elderly and disabled consumers friendly.

### Service Outreach to Limited Locations

The outreach of public transport is still limited. The outreach of the transport system must be able to cater to both urban and rural areas equally. This is to ensure a standard service to all. Outreach also promotes the usage of public transport and eventually brings balance to the industry.

### Efficiency of Services

Public transportation service starts at the ticket counters as well as in some cases the bus driver cum ticket seller. Fast service, good information, booking facilities, options of route, and punctuality in reaching destinations become sub-indicators that ensure continued use of the service by the consumer.

So very often, even Light Rail Transport (LRT) travel does not allow for reaching destinations on time. As a fast moving public transport system, such inadequacy deters people from using the service. During peak hours, services are not increased resulting in huge jam-packed stations which deter consumers from depending on this mode of public transport. Inefficiency forces consumers to use their own transport as it is much more reliable.

### Maintenance and Upgrading Technology

A culture of regular maintenance needs to be developed in Malaysia and this has been cited as a major setback. Scheduled maintenance, preventive maintenance and repairs are part of the operational management of the service provider. This requires thorough planning along with vehicle safety inspection for safety and reliability as well.

As there is an increase in consumer demand, improving or upgrading the technology becomes another vital point. Correct technology must be selected to ensure that the technology is able to cater to future demand.

### National Automotive Policy

This policy has been cited as one of the causes of extensive private vehicle use as it has made it easier for individuals to own a car with readily available loans. This has encouraged more Malaysians to own a car. Eventually a huge increase in the number of cars on the roads has resulted in massive congestion in several parts of the road system. However, the fact that consumers choose to be stuck in traffic congestion rather than take public transport is a serious issue.

## Overcoming these Problems: Some Suggestions

### National Transportation Policy

An integrated policy must be drawn up to outline the future of the transportation sector. This policy should cross-check on all available policies and integrate them to ensure smooth implementation. The development process should include all stakeholder participation to ensure representation from all levels. There should be one organisation overseeing all transportation issues.

### Integrated Transportation System (ITS)

Having an ITS will offer a better solution to public transportation issues. There should be one system for all transportation modes but with a few operators in the system rather than a monopoly. Consumers should be given a choice to choose the transport company based on service satisfaction. Diagram 1 below shows the flow of an integrated system. The dotted lines indicate freedom of choice for consumers.

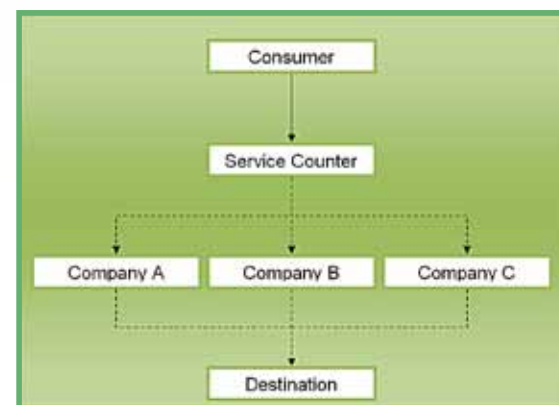


Diagram 1: Integrated Transportation System (Phase 1)

The clustering of transportation also plays a role. This encourages outreach and smooth flow of the crowd. This can also be done effectively with a proper frequency study of the passengers-traffic, timing, festivals, and other activities that may influence consumer behaviour.

Diagram 2 indicates how Phase 1 can be supplemented. Phase 2 ensures outreach as well as an easy flow. Station A is the main consumer meeting point and has to be connected through bus services. Station B offers a choice of bus service as well as train service. Station B must have Cross-over to allow for cross-travelling. The Main Station will be networked to the main frame of the national transportation network. Levels between Station A, Station B and Main Station can be added to ensure a better outreach.

Approximately 4% of CO<sub>2</sub> is contributed by the airline industry worldwide. It is advisable to study the Japanese and Singaporean transportation models so as to develop a good integrated model for the nation.

Trains will ensure fast travelling and cross-over in heavily congested areas. There should also be no vehicle areas, but instead free public transport such as a slow moving open commuter (in some US cities) to ensure a smooth transportation system is in force.

operators should not wait for the system or vehicle to breakdown to start repairing. Scheduled and preventive maintenance plays an important and vital role in sustaining an ITS.

Upgrading systems as well as introducing new systems can be done more cost effectively by systematically maintaining the basic structure. For instance, in France, the bullet trains use the same railway but the bullet train has a better system to tackle safety issues.

**Environmentally Friendly Approach**

The public transport system must opt for environmentally friendly approaches. It also must reflect the commitment of the government to reduce pollutant emission levels. Examples set by this industry will encourage people to change their habits slowly but surely and bring mutual benefit to all. Sustainability of the industry is ensured as well. There is a need to reiterate here that the National Green Technology Policy has also outlined transportation as one of its major thrust areas.

**Conclusion**

There should be an economic model to sustain the public transportation sector. Research and development to understand growing consumer needs must be undertaken on a regular basis. There should be a long term solution to cater to a shift from the current 20% users to 80% users in the future.

The proposed system ensures that the ITS is a network that enjoys good connectivity. An ITS with such appealing features will ease consumer difficulties and ensure increased use of public transportation. The ITS must not encourage monopolies and must be based on healthy competition.

**Enforcement of Service Quality as Well as Vehicle Safety**

Enforcement is the backbone for continued implementation of such a system. Enforcement should look into service quality and safety aspects. Services that do not comply or have high complaints or do not comply with standards drawn up should have their licence revoked.

**Proper Selection of Technology**

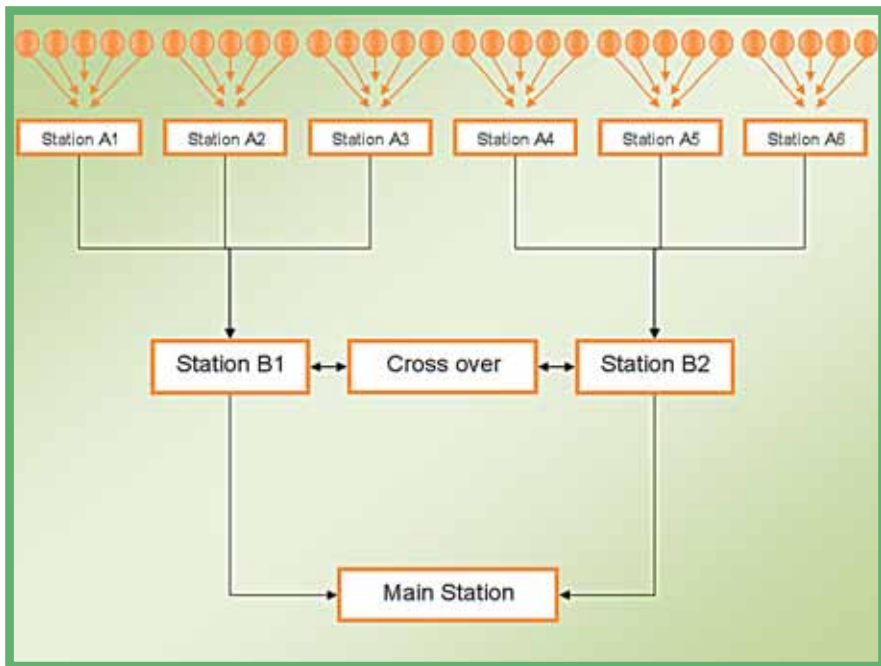
The Main Stations shown in Diagram 2 can have 'bullet trains' or fast moving trains to accommodate large volumes of passengers as an option. Being a fast moving transport, it ensures that communities from outlying areas are able to travel to major cities for work. It also reduces the use of air services which has a high impact on climate change.

There should be more lanes for public transport vehicles to ensure consumers of these services reach their destination more quickly than single vehicle users. This will further encourage people to use public transport.

**Maintenance and Upgrade**

Maintenance, a vital part of every industry, must be based on standards and done on a regular basis to ensure a proper ITS. The

I believe that through these measures, we can make the shift towards an efficient public transport system and greater use of that system by the public. Detailed planning must be put in place to ensure no derailment of the plans along the development period. If Malaysia could target 80% public transportation usage, we could achieve a significant reduction in CO<sub>2</sub> generation as well as energy usage.



**Diagram 2:** Integrated Transportation System (Phase 2)



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