

## Possibilities for bus tickets to go mobile in Sri Lanka

POLICY BRIEF

### KEY RECOMMENDATIONS

#### Subsidies

Given the net benefit to the majority of the populace by the introduction of mTickets for public transport via Near Field Communication (NFC) enabled mobile phones (either on the phone or the SIM), the state should subsidise costs (e.g. duty free imports of equipment) associated with the introduction of such a system.

#### Roles for Regulators

Currently NFC operates on an unlicensed frequency band elsewhere. The telecom regulator will have to resolve any licensing issues that may arise if NFC is to be utilised especially on a large scale. From a monetary perspective, the banking regulator needs to clarify its position on mobile payments in order to develop a sustainable business model for mTickets.

#### Change of mindsets

The current perception of mobiles being used to purchase bus tickets is that of a cumbersome process, requiring an SMS. In addition, making a purchase using intangible money is an unfamiliar concept in Sri Lanka. The public therefore, have to be educated and driven perhaps by incentive schemes to use the mTicketing service, when implemented.

### BUS TRAVEL IN SRI LANKA

Bus transport accounts for 93% of the public transport in Sri Lanka and is shared between some public and mainly private bus operators. The estimate is that 10 million commuters travel daily on approximately 18,000 busses.

#### The Ticketing System

Primarily, ticket books and manual ticketing machines are used on the public busses. However, most private bus owners have invested in digital ticketing machines that have the capability to store and process data. This additional functionality provides the bus owner with useful, timely data.

#### Issues with the Current Ticketing Service

From the bus operator's perspective;

- Public busses: 15% of bus fare is lost in transit
- Private busses: 25% of bus fare is lost in transit

This leakage is caused by:

- (a) Bus conductors (sometimes in collusion with the drivers) who often extract cash from the collection
- (b) Commuters who do not purchase tickets at all. Although this can be deliberate, it can also be due to the time taken to buy a ticket through the manual system. For example, commuters travelling very short distances, especially at peak time may not get the opportunity to purchase a ticket.

- (c) Commuters who deliberately travel longer distances than what is paid for

Therefore, from the supply side there is an inherent need to make the transaction secure, faster and reduce the cash leakage.

From the commuter's perspective, often change is not given. As a result a journey costs more than what it should. The need for a more efficient ticketing system that doesn't require commuters to carry the exact change therefore, is eminent from the demand side as well. Another hassle is overcrowding to meet the 'cash lost' due to leakage.

### AUTOMATED TICKETING SERVICE

Two techniques are being considered to implement eTicketing services in Sri Lanka.

1. *Contactless smart card*: Uses an embedded integrated circuit in a card to store and process data and communicates with the card reader via radio frequencies.
2. *Mobile phone*: Near Field Communication (NFC) enabled phones or NFC enabled SIM cards used to convert a mobile phone in to a device similar to a smart card. Short-range wireless communication is used to complete a mobile phone-to-terminal transaction.

Note: SMS enabled payments are cumbersome and although it is an option it is not being considered for the purpose of bus tickets.

The use of the mobile phone however, adds an extra level of security as the commuter must authorise the transaction before the money is deducted. The smart card on the other hand, deducts the money as soon as it is in contact with the card reader. With no option for human intervention (in real-time) to stop the transaction, this mode of bus ticketing could be subject to fraudulent transactions.

## CHALLENGES AND FRINGE BENEFITS

- *Cost of conversion:* For the adoption of either technology, there is a significant cost of converting from the current, manual system. The digital ticket machines that are currently in use among the private bus operators will only require a chip upgrade for the smart cards to be used. However, the significant cost of making and distributing these cards must be considered. On the other hand the mobile phone option will only require a reader from the bus operator's point of view but a hardware upgrade (either phone or SIM) from a user point of view.
- *Acquiring the technology:* If mobile phones are to be used, either the handsets or the SIM cards have to be NFC compatible. Even though NFC is now being built in to new phones being manufactured (Nokia is taking the lead), integrating the secure chip to the SIM card is a more useful strategy. At the moment however, there is no standardised interface on the SIM card to place a chip. Thus standardisation of the SIM to enable NFC would help quicken the adoption of the technology.
- *The lack of mobile phone ownership:* The mobile phone option assumes all commuters own their own phones. This is not the reality. Although the majority of commuters do use a phone, an alternate ticketing system will be required for those who do not have mobiles. Even with the implementation of the smart cards, the manual ticketing system will be needed as an alternative.
- *Change management:* A survey carried out among regular commuters in Sri Lanka, demonstrated preference of the smart card option due to the fact that the perception of using the mobile phone to purchase tickets is strongly associated with existing non-voice services in the country. These current services often require users to send an SMS or make a phone call; all at premium tariffs. Therefore, if the mobile platform is selected for the implementation of automating the bus ticketing system, a significant investment is required in order to change mindsets and encourage users. Further, bus conductors are also likely to resist the change from

cash to cashless operations. An incentive scheme may be in order for bus conductors and drivers who adopt the new system (e.g a commission scheme).

- *Privacy issues:* The use of an electronic device (either via a smart card or a mobile 2.0 application) suggests that commuters can be tracked by the service provider. There is an implication of infringement of privacy rights that will need to be dealt with.

The economy-wide benefits of such a system are evident. As discussed above, for the bus operators the automated system is a way of reducing (if not eliminating) cash leakages, while for the commuters it provides ease. In addition however, there are fringe benefits that both the network and bus operators can capitalise on. Customer loyalty programmes for instance, can be introduced by bus operators for commuters who use the automated service. In the event of the NFC enabled SIM card being used, network operators can take the opportunity to bundle a suite of Mobile 2.0 applications and increase customer base. Such a service will provide the opportunity for the State to restructure its untargeted transport subsidy program to one that is specifically targeted for selected user groups saving significant amounts of funds otherwise being inefficiently used.

## CONCLUSION

The introduction of an automated system has the potential to benefit the BOP among others. Nevertheless, change is rarely welcome; and bus operators will have to work collectively to promote this system by means of innovative incentives for commuters.

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Harsha de Silva, PhD  
+94 77 768 6897 | [harsha@lirneasia.net](mailto:harsha@lirneasia.net)

Rohan Samarajiva, PhD  
+94 77 735 2361 | [rohan@lirneasia.net](mailto:rohan@lirneasia.net)