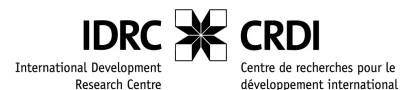


m-Payments in Public Transport: The case of bus tickets in Sri Lanka

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[with research assistance from Ruchini
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Question

- ❑ Can Mobile2.0 applications increase efficiencies in public transportation in Sri Lanka?
 - Focus: The sale and purchase of bus tickets
- ❑ If so, what needs to be done to make it happen?

Background

□ Public transport

- Accounts for three-fourths of the passenger transport in Sri Lanka.
 - Of this; 93% bus [5,500 SLCTB; 18,000 private buses].
 - 10m+ passengers/day
- Fare is regulated by NTC [cost+]

□ Mobile phones

- Close to 13million mobile SIMS currently in use
- T@BOP3 [2008] 36% mobile owners at BOP

Current bus ticketing system

- ❑ Buses issue individual tickets to commuters when they pay cash for the bus ride
 - Government buses use both ticket books and manual ticket machines to issue tickets to commuters
 - Private buses primarily use digital ticketing machines that prints out tickets



Supply side: The bus operator

- ▣ 'Lost in transit': 25 percent of ticket revenue
 - Leakage
 - Slow process
- ▣ Need
 - Reduce leakage
 - Make the transaction faster

Demand side: The commuter

□ Get 'played out'

▪ Change given

- Always 11; most of the time 33; sometimes 33; rarely 17; never 6

▪ Tickets given

- Always 14; most of the time 27; sometimes 28; rarely 27; never 4

□ Hassle

▪ Need to carry exact change

State [or Provincial Government]

- ▣ Inability to target transport subsidies

Option: Contactless 'smart' cards*



Embedded integrated circuit which can process and store data. UK Oyster, HK's Octopus. DTC pilot: INR 25 card.

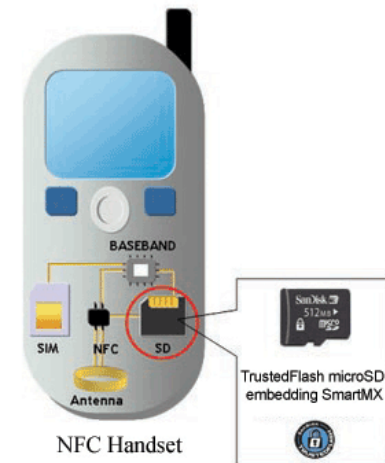
Option: Mobile phone

□ SMS

- Purchase ticket via SMS; add to bill or deduct from pre-paid [like e-channeling, movie tickets]

□ NFC

- Near Field Communication
- Can have a ‘conversation’. User can authorize the payment requested by NFC reader



NFC is a standards-based, short-range wireless connectivity technology enabling simple and safe two-way interactions between electronic devices. **Merging of mobile phone and contactless ‘smart’ card**

NFC mobile phones*

□ NOKIA

- 2005 the first NFC enabled phone 3220 now others

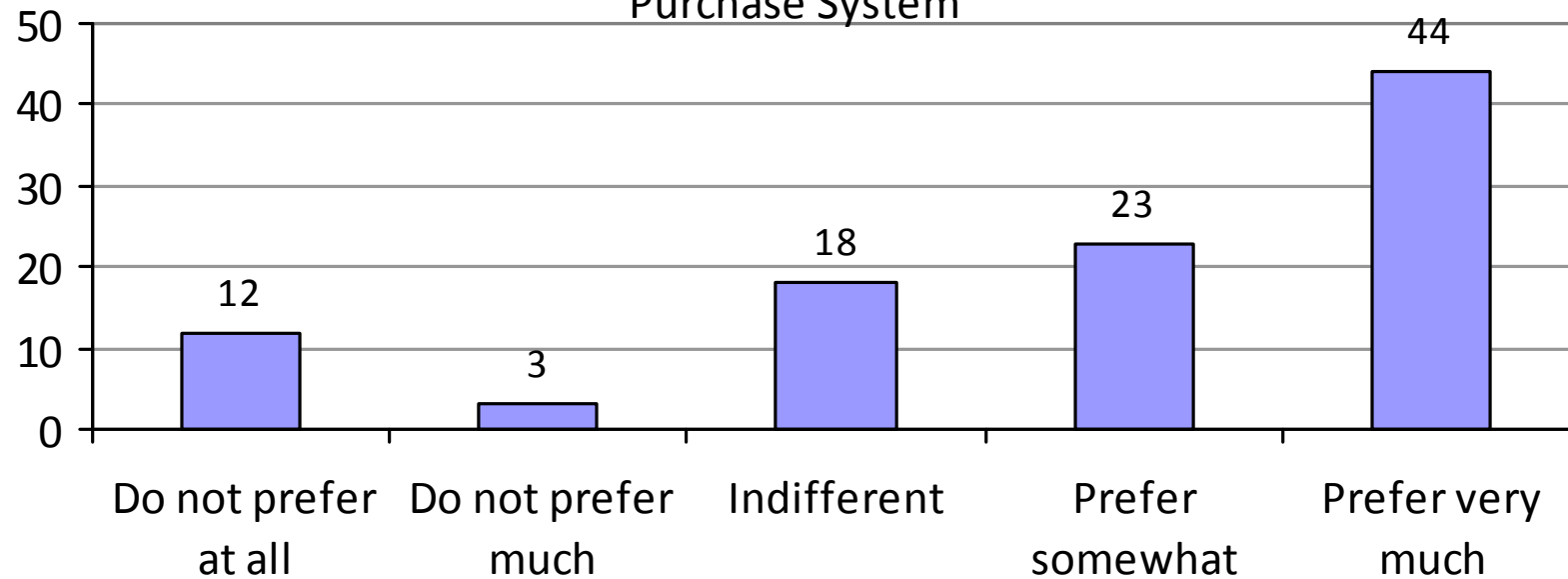
□ 'Breakthrough' innovation?

- Instead of NFC phone; how about an NFC SIM?
 - China Telecom [Non NFC standard RF SIM]
 - NOKIA 6216: First NFC-standard SIM compatible. Operator can load application [Mid 2009]

Japan is leader with NTT DoComo Osaifu-Keitai e-wallet phones. Spain, Netherlands, France and Germany, mobile bus and rail ticket system are being piloted. China has started. UK to start by 2015 and fully switch to NFC by 2020.

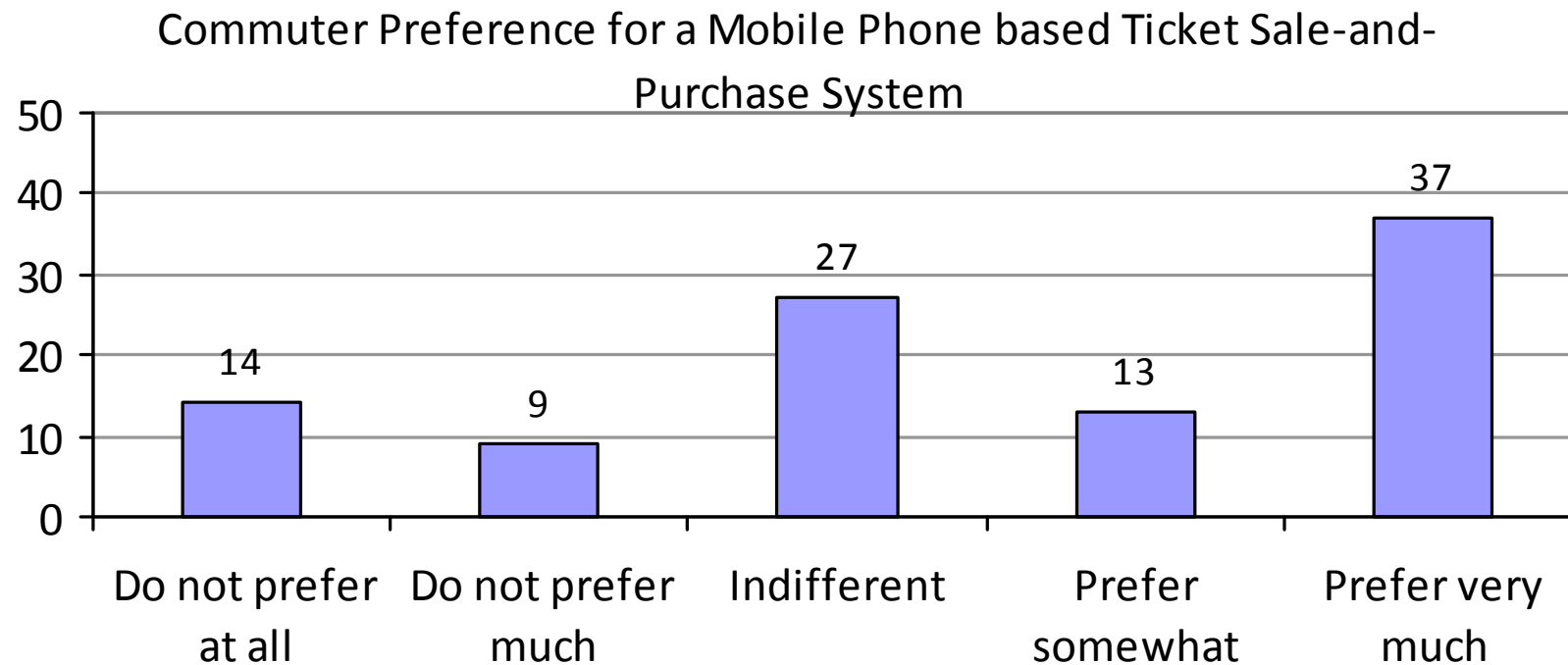
Contactless card enabled e-Bus ticket*

Commuter Preference for a Top-Up-Card based Ticket Sale-and-Purchase System



Familiarity?

Mobile phone enabled e-Bus ticket*



Perceived 'hassle': Taking a long time. Assume a SMS type transaction, not NFC phones.

Challenges and policy responses 1

- ▣ **Conversion** of current digital ticket machines to NFC mobile phone readers [or smart cards]
- ▣ State can offer one-time conversion subsidy or duty-free importation of NFC phone reader equipment

Challenges and policy responses 2

- ❑ **Procuring** [smart cards] NFC enabled mobile phones
 - Most mobile phones are not NFC-enabled
 - New innovation of NFC in the SIM
 - But no standardised interface on the SIM card to place a NFC enabled chip
- ❑ State could incentivise the importation of NFC enabled mobiles; time-frames
- ❑ [At international level] standardisation of the SIM to enable NFC would help quicken the adoption of the technology

Challenges and policy responses 3

□ Telecom regulatory issues

- NFC operates on unlicensed band
 - ISM band of 13.56 MHz with a bandwidth of 14 kHz
- Regulator to clear all licensing and reserve frequencies

□ Banking regulation

- Bank-led model [eZpay: everyone needs a bank account] has failed. But mobile phone led air-time transfer [eChanneling] has worked
- Clarify position on mobile payments to develop sustainable business model to work within existing regulations
 - Bank-assisted model [agents have bank accounts]? az6
 - Bus operator is an agent

Slide 15

az6

better to say that the current policy framework is unclear in BD (draft "guidelines" for mobile payments were drawn up and are said to be being finalised, yet various operators and banks have been given permissions to operate various services to date).

not sure what the situ in PK is, but would be good to check (unless you already have) or else you may be preaching to the converted :)

ayesha z, 19/04/2010

Subsidies and market efficiencies

▣ Targeted **subsidies**

- State can use the system to restructure the current transport subsidy delivery via the operator to the targeted commuter

▣ Further **market efficiencies**

- Utilize idle busses; reservation system [first and last bus]
- Congestion or time-of-day tariffs
- Dynamic tariffs
 - Public policy issues: What time? How much?

Summary

- ❑ Supply side as well as demand side needs exists for a better bus ticket solution
 - Either a contactless ‘smart’ card or a NFC enabled mobile2.0 service can fulfill this need
- ❑ Given wide-spread economic benefits state could encourage the adoption of Mobile2.0 solution in public transport
 - Conversion and procurement subsidies
 - Telecom and banking regulation
 - Market efficiency issues



Thank you.

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