

Mobile Payments in India: Coming to Grips

Ashok Jhunjhunwala, IIT Madras, ashok@tenet.res.in
Chairman MPFI

Mobile phone is a universal device

- ▶ **900 million connections and growing**
 - ▶ most Indian families have access to one
- ▶ **It is a two way communication device**
 - ▶ Unlike cards
 - ▶ Multiple level of security possible
- ▶ **Multi-mode communications**
 - ▶ SMS, Internet, **USSD and Voice**
 - ▶ Even the semi-literate and illiterate people find it easy to use

Enables transactions in-person and remotely

We have started

- ▶ Regulatory issues largely resolved driven by MPFI
 - ▶ Rs 50000 payment with Mobile Internet and Rs 5000 for SMS
 - ▶ Mobile Wallets enabled

- ▶ At the same time, MPFI and NPCI has enabled
 - ▶ Person to person payments using mobile
 - ▶ All one needs is payee's **mobile number and MMID**
 - ▶ **Inter-operability**
 - Payment from a customer using any bank, any mobile operator, any technology to any other customer of different bank, different operator, and using a different technology
 - ▶ Banks, telcos, technology providers and RBI aligned
 - ▶ NPCI has set up IMPS

Where are we – mobile payments using bank accounts?

- ▶ **50 banks** have peer to peer connection through IMPS
 - ▶ Payment from one person to another
 - ▶ Can also be used to pay small merchant instantly using Mobile number and MMID
 - ▶ Banking services including balance, bill payment, mobile top-up
 - ▶ Money transfer to credit-card possible through services like visa-money transfer
 - ▶ Money transfer via NEFT being enabled
- ▶ **10 banks** on peer to **merchant connection**
 - ▶ Railway ticket
 - ▶ Credit card payments
 - ▶ Telephone and electricity bill payment
 - ▶ Mobile top-up
 - ▶ DTH payment
- ▶ **Single transaction limit up: Maximum - Rs 50000**
 - ▶ Total limit of Rs 250000 per month

Where are we – Mobile Wallets?

- ▶ Over **fifteen Mobile Wallets** launched
 - ▶ Some as **open wallets** in partnership with bank
 - ▶ Can connect today to NPCI and provide all services as Mobile payment
 - ▶ Others as **semi-closed wallets**: No cash-withdrawal possible
 - ▶ Airtel Money, OXI-cash, ITZ-cash, Col Tech now connecting to NPCI
 - ▶ Peer to peer payment possible
 - Can make card to bank account payment and vice-versa
 - ▶ Insurance companies like United Insurance on IMPS
 - ▶ IMPS ready to connect any financial instrument

Mobile Payments are taking off

- ▶ **But take off slow**
 - ▶ Reaching 100,000 transactions a month through NPCI
 - ▶ When will it explode?
 - ▶ What are the limitations?
 - ▶ Do people feel payments are secure?
 - ▶ What is needed to promote take-off
- ▶ **The biggest benefit**
 - ▶ To customers: immediate handy payment even **remote payment**
 - Send money to village
 - ▶ To nation: **move away from cash** – huge gain to economy
- ▶ **Task ahead**
 - ▶ Expand Financial Inclusion: Bring Banking Correspondents to fold

Payment Mechanism and Security

- ▶ **Download application** on Mobile / built in application using Internet (GPRS) or SMS
 - Internet payment 100% safe
 - Getting SMS confirmation in inbox is somewhat unsafe, as they can be fake
 - ▶ The down-side is the large variety of phones with different capabilities
 - Each will require customization: Customer has to download at some shop, if she does not have Internet on her phone

- ▶ **Use USSD**
 - ▶ Available on all GSM phone
 - ▶ No application download required
 - ▶ Can enable customers instantly
 - All that they need is their MMID

- ▶ **Voice based Mobile payments** and banking
 - ▶ Even usable by those not comfortable with text
 - ▶ **Voice-based authentication** in addition to mobile number and password / PIN
 - ▶ Can be excellent complement to UID for small value transactions

Internet (GPRS) Solution

- ▶ Over 50 banks / financial institutions have application download for
 - ▶ Java enabled phones
 - ▶ Android phones
 - ▶ Still not available for iPhone or Windows phone and some old phones where downloading is not possible
 - ▶ So some **PUSH** required for adoption
 - ▶ Can not transfer money to someone who has not yet downloaded
- ▶ **USSD** does not have such limitation: will create **PULL**
- ▶ **Voice** payment does not have such limitation

Ease of use is a must

- ▶ Solutions must be simple, easy to use and yet elegant and at affordable charges
- ▶ Need to align telcos and banks on USSD
 - ▶ DOT has already assigned USSD code ***99# for all payments**
 - Balance, P to P payments, Request Money, Recharge, Bill payments
 - ▶ Enable USSD for mobile payments at some charge to customer as SMS / GPRS

Technique behind Voice Payments

Only smart people can read this

cdnuolt blveiee taht I cluod aulacly uesdnatnrd waht I was rdanieg. The phaonmneal pweor of the hmuan mnid, it deosn't mttær in waht oredr the ltteers in a wrod are, the olny iprmoatnt tihng is taht the frist and lsat ltteer be in the rghit pclae. The rset can be a taotl mse and you can sitll raed it wouthit a porbelm.

Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe. yaeh and I awlyas tghuhot slpeling was ipmorantt!

Core Technologies behind Mobile Voice Banking and Wallets

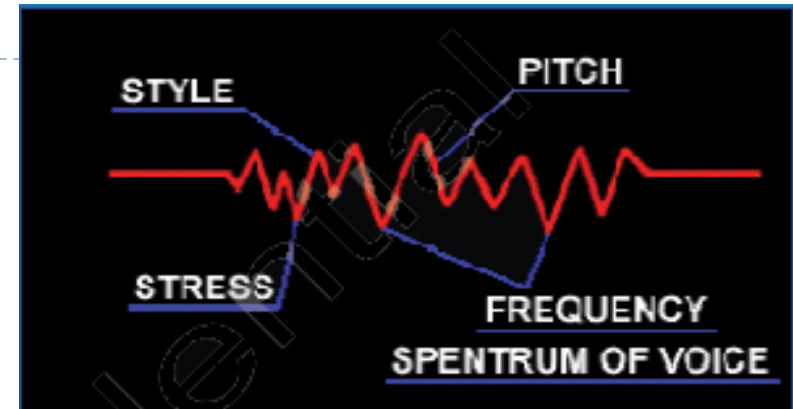
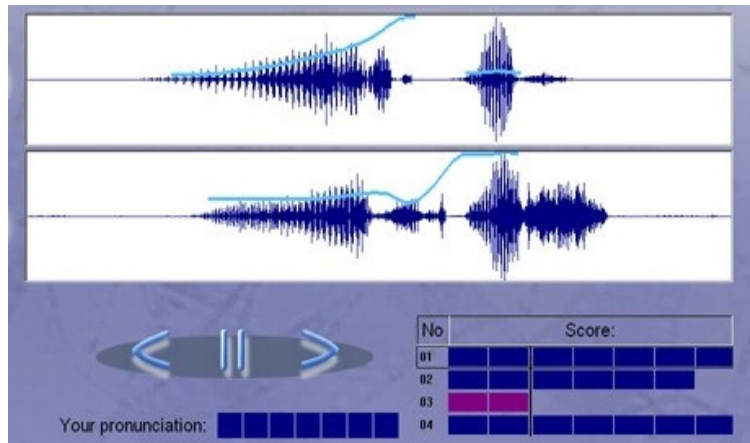
Voice Biometrics

for user authentication

A **voiceprint** is a patented series of algorithms & measurements that represent a set of features extracted from a person's voice:

- Unique to each person & closely related to the vocal tract shape and motion patterns

Voice Biometrics Engine captures over 30 parameters of an individual's voice



Speech Recognition

for voice-navigated transaction

Speech Recognition is the ability of a program to understand and carry out spoken commands:

- Enables natural, human-like conversations and satisfying interactions

Today Speech Recognition technology runs in 11 languages and over 100 Indian dialects

Can Mobile payments replace cash?

- ▶ All retail transactions use Mobile payments rather than Cash
 - ▶ Cards have taken of to a very limited extent
 - ▶ Great boost to nation's economy
 - ▶ Also introduce traceability
 - ▶ Key to fight black-money
- ▶ Mobile based credit card **safer** than ordinary ones
- ▶ In what time frame can an **impact** be made?

Education, Promotion and Incentives for adoption?

- ▶ Finance ministry should launch a **media-campaign** jointly with banks and mobile operators?
- ▶ IITM planning to use Mobile payments for all **Student Gymkhana fees**
 - ▶ IITMRP plans **payment at food court** using Mobile payment
 - ▶ Can **each bank branch** have a target of getting its customers to start using mobile payments?
- ▶ **Provide incentives** as Mobile payment brings huge benefit to nation's economy
 - ▶ Can **VAT be reduced by 0.5%** for a year for all mobile payments at a merchant
 - ▶ Can **banks give 0.5% cash-back** for all mobile payment to merchants?