

# Mobile payment in India: Technologies, Bottlenecks and Solutions

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Chairman MPFI

# Mobile phone is a universal device

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- ▶ 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

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- ▶ 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?

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- ▶ **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: Rs 50000; Maximum: Rs 250000 per month

# Where are we – Mobile Wallets?

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- ▶ 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

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- ▶ **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

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- ▶ **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

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- ▶ 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

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- ▶ 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

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## **Only smart people can read this**

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## CORE TECHNOLOGIES

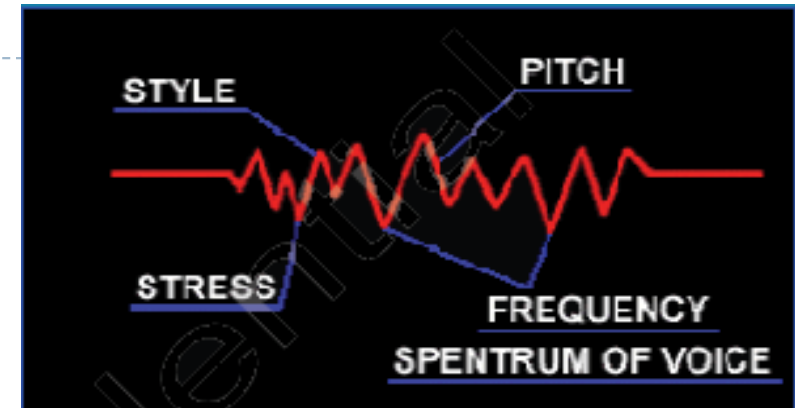
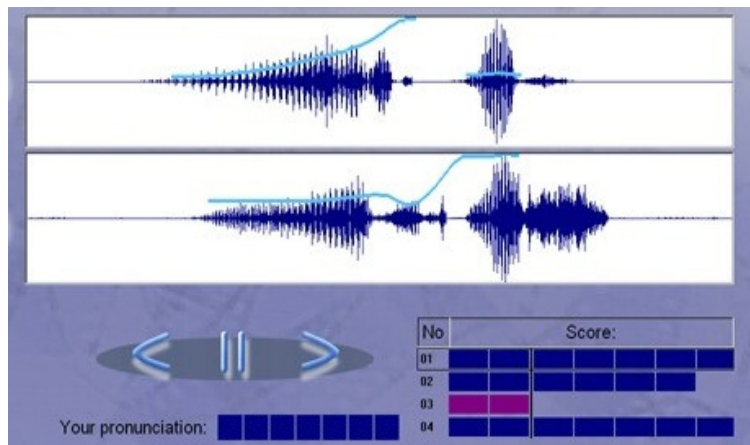
### Voice Biometrics

*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**



### Mobile Voice Banking

#### Solution

- Users to conduct banking and commercial transactions using any basic mobile phone
- Customers authenticate their identity through Voice Biometrics then use Speech Recognition process their requested transaction
- Readily integrates with banks, aggregators and other m-commerce service providers

#### Benefit

- Cost savings through no need for physical presence and no investment in POS devices
- User-friendly system, even for semi-literate users
- Enhanced transaction security through Voice Biometrics
- Multilingual options create vast outreach capabilities across India

### Mobile Wallet

#### Solution

- Enables merchants to accept mobile payments remotely
- Clients link their mobile to any financial instrument, then they use this as a tool for transferring payment
- Uses Speech Recognition to select the payment, and validates the payment by authenticating user identity through Voice Biometrics

#### Benefit

- Enhanced customer satisfaction with self-service transactions
- Simple integration with banks for transactions, reconciliation and settlement
- Enhanced transaction security through Voice Biometrics; Multilingual options create vast outreach capabilities across India

# Can Mobile payments replace cash?

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- ▶ 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?

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- ▶ 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?