Mobile Banking experiences high growth in recent years.

Commercial banks expect Mobile banking as a new growth engine of retail business.

Currently, Mobile banking mainly covers simple and basic financial products and services.

Mobile Banking experiences high growth in China in recent years.

Top Five Large Banks (Registered Users)

- ICBC
- ABC
- BOC
- CCB
- BuCom

Registered users (100 million)

- ICBC: 1.4
- ABC: 1.2
- BOC: 0.8
- CCB: 1.0
- BuCom: 0.4
Mobile Banking experiences high growth in China in recent years

Top Five Large Banks (Trading Volume)

Trading volume (100 million RMB)

Other Major Medium size Banks (Registered user)

Registered user (10 thousand)
Mobile Banking experiences high growth in China in recent years

Other Major Medium-size Banks (Trading Volume)

Trading volume (100 million RMB)

- Commercial banks expect Mobile banking as a new growth engine of retail business

Cost reduction

Customer experience

Bank Motivation

Processing Efficiency

Brand appearance
Mobile banking mainly covers simple and basic financial product and service

- **Mobile Banking**
  - Main Functions are Simple and Basic
  - Non-transaction based
    - Balance checking
    - Losing Card reporting
    - Financial market quotation etc.
  - Transaction-based
    - Remittance
    - Payment
    - Brokerage
  - Remittance
    - Account under same name
    - Third party account
  - Payment
    - Utility payments: Gas, water, phone
    - Online deposit, shopping account,
    - Bank account, Mobile payment
  - Brokerage
    - Mutual Fund, Insurance, WMP, FX, Gold, Derivatives etc.

- Some Innovative attempts
  - On-line collateralized loan
    - Bank issue on-line bans by taking borrower’s undue Time deposit or Treasury bond as collateral
  - QR code remittance
    - Payee receives fund by scanning the QR code created from Payer’s account information through Mobile phone application downloaded from bank.
  - ATM Cash-taking without Card
    - Taking cash from ATM by inputting password and SMS code received by mobile phone
Driving Force and Constraint

What is the driving force?

Market driving rather than Policy promoting.

- Internet Population
- Smart phone user
- Telecom operator
- Technology innovation

Driving force

Demand side
- Fast growth and high proportion of internet population
- Mobile internet is replacing the traditional internet
- Smartphone is fast popularizing in China
- On-line shopping and payment

Supply side
- Telecom operators enhance the infrastructure, increasing bandwidth and decreasing tariff cost
- Dropping price of smartphone
- Various App and software
Driving Force and Constraint

Internet population in China by June 2014

Internet Population (10 thousand) vs. Percentage of Whole Population

Mobile Internet population in China by June 2014

Mobile Internet Population (10 thousand) vs. Percentage of internet Population

Source: CNNIC 2014 REPORT
Driving Force and Constraint

Device Preference of Internet surfing
In China by June 2014

<table>
<thead>
<tr>
<th>Device</th>
<th>2013.12</th>
<th>2014.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laptop</td>
<td>44.1%</td>
<td>43.7%</td>
</tr>
<tr>
<td>Mobile</td>
<td>61.0%</td>
<td>83.4%</td>
</tr>
<tr>
<td>PC</td>
<td>81.70%</td>
<td>80.9%</td>
</tr>
</tbody>
</table>

Source: CINNC 2014 REPORT

Driving Force and Constraint

On-line shopping activity
In the first half of 2014 in China

<table>
<thead>
<tr>
<th>Year</th>
<th>Online shopper</th>
<th>Percentage of mobile internet pop</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013.12</td>
<td>30186</td>
<td>49.8%</td>
</tr>
<tr>
<td>2014.6</td>
<td>33151</td>
<td>52.5%</td>
</tr>
</tbody>
</table>

Source: CINNC 2014 REPORT
Driving Force and Constraint

Security concern

PC internet

- Anti-virus
- Firewall
- Two-factor authentication
- IP tracking

Difficult to be stolen
Driving Force and Constraint

**PC internet: two-factor authentication**
- USB key
- Token
- SMS password

Driving Force and Constraint

- Anti-fraud: What has been done.
- SMS password is a must-choice
- Amount limitation on money transferring to third-party account
- Suspicious behavior monitoring and intervention
- Risk reminding and user education

- Other technology for mobile phone
  - Mini USB key
  - Fingerprint
  - Voice print
Driving Force and Constraint

- Imbalance of mobile banking development between urban and rural area
- In rural area, both internet and financial service infrastructure is insufficient
  - Limited bandwidth
  - Smartphone
  - Self-protection still under internet environment
  - Cash using
  - Telecom fee
  - Unaffordable budget on IT infrastructure by small rural financial institutions

Policy Framework and consideration

- Authorization has been released in 2007, all E-banking business by banks is not necessary to apply license.
- Administrative rule on E-banking has been issued in 2006, Mobile banking is included.
- The regulations mainly focus on risk management and customer protection.
- Main challenge is the balance between risk control while promoting inclusive finance.
Policy Framework and Consideration

- Major regulation principle follows “Administrative rule on E-banking” issued in 2006
  - On-line banking, telephone banking, Mobile banking are included.
  - Unnecessary for receive E-banking license since 2007
  - Foreign banks need branch existence and localized data storage for the needs of supervision and legal issues.
- Risk management requirements
  - IT governance and policies in place
  - Information security and data protection
  - User identification and electronic signature
  - Single URL Link and Call service number to client
  - Annual security assessment by independent institution

Policy Framework and Consideration

- Notice on E-banking risk management issued in 2007
  - For fund transfer to a third-party account (more than RMB 5000 yuan in one day), two-factor authentication should be applied.
    - Basic factor — something customer know
    - Assistant factor — something customer have
      - USB key (IC card)
      - Token
      - SMS OTP
      - Magnetic card
  - Security education and risk alert.
  - Scanning phishing website
Policy Framework and consideration

- Notice on E-banking customer information protection issued in 2010
  - For on-line payment, when the third party is responsible for the authentication, banks should be authorized by account holder through counter or other effective electronic channels.
  - Without authorization from account holder, bank should not provide customer name, ID number, mobile number, telephone number and correspondence address to third party.
- Notice on cooperation between Banks and Payment service company issued in 2014
  - Both banks and Payment company should complete authentication process before customer create links between bank account and payment channel provided by payment company.
  - Only two-factor authentication account can activate payment company service.

Policy Framework and consideration

- Mobile banking will grow faster than traditional E-banking model
  - Mobile phone is easy to buy and use
  - People spend more time on mobile internet
- Large potential of mobile internet population growth in rural area
  - Easier than PC internet
  - New solutions for banking network (Saving the cost to set branch)
  - Fitting the financial needs in rural area: small amount, basic financial product
  - Technology progress will strengthen security capability
- More flexible regulatory policies for on-line scenario should be considered
  - On-line account creating through the counter/ATM
  - On-line financial product selling: risk tolerance assessment (complex product)
  - On-line credit card issuance (credit investigation): limited on-line scenarios (such as small amount shopping)

- It's not banking business, but a whole financial ecological system.
Policy Framework and consideration

Promoting cooperation
- Banks and non-banking institution
- Banks and telecom
- Banks and technology company
- Large banks and small rural financial institutions

Promoting internet-based financial business model
- P2P lending
- On-line Micro loan firm
- Payment agency
- Mobile branch

Refreshing rules and regulations
- Face to face Real-name account registration by FRGC
- Due-diligence requirements on loan issuance
- Promoting new authentication Instruments and technology
- Strengthen anti-fraud and anti-money laundering mechanism

Thank you

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E-banking supervision
Banking Innovation Department
China Banking Regulatory Commission