Digital Payment Trend in Japan

May 15, 2016

Next Generation IC Card System Study Group

Cashless Settlement Ratio (2015)

- Japan: 18%
- Korea: 54%
- China: 55%
- USA: 41%

Source: METI “FinTech Vision”
Agenda

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4. Transport IC Card and Payment
5. Contactless e-money Payment
6. NFC Mobile Payment
7. House Prepaid Card
8. Other Topics
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1. Settlement Overview

Share of Personal Consumption by Settlement Method

◆ Japan (2015)

- Cash, 49.5% (▲0.8p)
- Credit card, 16.0% (+1.1p)
- Debit card, 0.2%
- Prepaid e-money, 5.6% (+0.9p)
- Pay-easy, 5.2% (+1.0p)
- CSP*, 3.5%
- Bank transfer/Direct debit, 19.9% (▲2.4p)

◆ USA (2014)

- Credit card, 29.6%
- Debit card, 24.5%
- Check, 10.4%
- Cash, 16.7%
- Prepaid etc., 4.1%
- Bank transfer/Direct debit, 14.6%

* CSP: Convenience Store Payment

Source: CREDIT SAISON CO., LTD.
Credit Saison estimates based on materials published by the Ministry of Economy, Trade and Industry, Nihon Card Business Institute’s New Payment Report, Mitsubishi UFJ Research and Consulting, and other companies and associations.

Source: THE NILSON REPORT
Comparison of settlement amount per transaction

(Yen)

Ref. ¥10,000 ≈ US$89 ≈ ¥100,600

Source: Bank of Japan
2. Credit Card

- By 2020, all credit payment terminals support IC(EMV) cards
  - But no description about contact/contactless: contactless technology is optional.

- Tokenization
  - On-us transactions, a major way in Japan, prevent full-fledged tokenization services from spreading.
3. Debit Card

- **J-Debit**
  - Started in March, 2000
  - Promoted by Japan Debit Card Promotion Association
  - 1077 financial institutes issue the cards (as of March 21, 2017)
  - Around 450,000 terminals available nationwide
  - Cash cards issued by bank can be used without prior procedure
  - No annual fee, no age limit

- **Credit Brand Debit**
  - Introduced around 2006 in Japan
  - Available at the shops accepting credit cards
    - VISA Debit : 44 million places globally
    - JCB Debit : 31 million places globally
  - Also used for net shopping and cash withdrawal
  - Annual fee needed occasionally
  - Senior high-school age and over

![Debit card transaction volume](Source: Japan Debit Card Promotion Association)

Source: Bank of Japan
4. Transport IC Card and Payment

- Transport IC card situation in Japan
  - Transport operators started implementing IC card ticketing system individually from 2001
  - Nationwide major ten IC card interoperability completed in March 2013
    - More than 120 million interoperable IC cards issued (as of Oct. 2016)
    - 4,804 stations / 44,115 buses accept the cards
  - Further nationwide interoperability is ongoing
  - Transport IC card used as e-money payments
    - 379,000 shops accept payment by the cards (as of Feb. 2017)
    - 140 million monthly transactions per month (Max. in Jul 2016)
    - Connected thin-client terminals contribute to the further touch points

IC card tickets throughout Japan have become interoperable
Contactless e-money Payment

**e-money payment transaction trend**

<table>
<thead>
<tr>
<th>Year</th>
<th>Transactions (million times)</th>
<th>Transaction Amount (trillion yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1,000</td>
<td>0.0</td>
</tr>
<tr>
<td>2010</td>
<td>2,000</td>
<td>1.0</td>
</tr>
<tr>
<td>2011</td>
<td>3,000</td>
<td>2.0</td>
</tr>
<tr>
<td>2012</td>
<td>4,000</td>
<td>3.0</td>
</tr>
<tr>
<td>2013</td>
<td>5,000</td>
<td>4.0</td>
</tr>
<tr>
<td>2014</td>
<td>6,000</td>
<td>5.0</td>
</tr>
<tr>
<td>2015</td>
<td>7,000</td>
<td>6.0</td>
</tr>
<tr>
<td>2016</td>
<td>8,000</td>
<td>7.0</td>
</tr>
</tbody>
</table>

**Number of e-money cards and mobile**

<table>
<thead>
<tr>
<th>Year</th>
<th>Transactions (million pcs)</th>
<th>Percentage of mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>100</td>
<td>0%</td>
</tr>
<tr>
<td>2010</td>
<td>150</td>
<td>4%</td>
</tr>
<tr>
<td>2011</td>
<td>200</td>
<td>8%</td>
</tr>
<tr>
<td>2012</td>
<td>250</td>
<td>12%</td>
</tr>
<tr>
<td>2013</td>
<td>300</td>
<td>16%</td>
</tr>
<tr>
<td>2014</td>
<td>350</td>
<td>20%</td>
</tr>
<tr>
<td>2015</td>
<td>400</td>
<td>24%</td>
</tr>
<tr>
<td>2016</td>
<td>450</td>
<td>28%</td>
</tr>
</tbody>
</table>

- Figures cover pre-paid e-money payment using devices in which contactless IC chip is embedded.
- These are calculated by submitted data from eight e-money issuers, i.e., electronic money service - "Rakuten Edy", public transportation services - "Suica", "Kitaca", "SUGOCA", "PASMO", "ICOCA", and services by retail companies - "WAON", and "nanaco".
- The value and volume of transit fare collections are not included.

Source: Bank of Japan

Source of the mobile OS share: MM Research Institute
6. NFC Mobile Payment

Progress of NFC mobile payment in Japan

- **2002**
  - Develop NFC by Sony & Philips

- **2004**
  - FeliCa Mobile Wallet Service
  - Mobile Edy (e-money)
  - NFC Forum

- **2005**
  - JCB QUICPay (credit service)
  - NTT DOCOMO iD (credit service)

- **2006**
  - JR East Mobile Suica (transit)

- **2007**
  - 7&I nanaco (e-money)
  - AEON WAON (e-money)

- **2010**
  - FeliCa on smartphone

- **2012**
  - NFC smartphone with FeliCa

Source: Sony Corporation
Since 2016, Apple Pay and Android Pay™ have been also available for use in Japan, by taking advantage of the NFC (Near Field Communication) standard and other international standards.

“Apple Pay” payment scheme

<table>
<thead>
<tr>
<th>Payment type</th>
<th>Relevant card</th>
<th>Payment service</th>
<th>In-app payment brand</th>
<th>note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepaid</td>
<td>Suica</td>
<td>Suica</td>
<td>-</td>
<td>Transport ticket / e-money payment</td>
</tr>
<tr>
<td>Post pay</td>
<td>Aeon, dCARD, Softbank, MITSUI SUMITOMO, Cedyna, JP BANK, Life, etc</td>
<td>iD</td>
<td>JCB, Mastercard, AMEX</td>
<td>Credit card</td>
</tr>
<tr>
<td></td>
<td>JCB group, Amex, EPOS, Orico, SAISON, JACSS, Seven, VIEW, MUFG, UCS, RAKUTEN, etc</td>
<td>QUICPay</td>
<td>JCB, Mastercard</td>
<td>Credit card</td>
</tr>
</tbody>
</table>
The prepaid settlement market in FY2021 expands to 13 trillion yen

House prepaid settlement will reach 1.9 trillion yen in FY2021

Three major solution providers are developing the house prepaid market
8. Other Topics

- Various payment method
  - Barcode payment
    - Convenience store franchise Lawson started accepting Alipay in January 2017 at its around 13,000 stores. Lawson also introduced another barcode type payment called LINE Pay.
  - Bluetooth payment
    - Origami Pay is making use of “iBeacon” Bluetooth technology for its payment, available at some shops and taxi.

- Virtual currency
  - Bitcoin
    - Around 5,000 shops accept Bitcoin payment in Japan as of April 2017. A large electronic appliance store BIC CAMERA recently introduced Bitcoin payment at its two stores firstly in order to appeal inbound tourists.
    - The Act on Financial Settlement revised on April 1st has positive impacts on the spread of Bitcoin payment.
  - “MUFG Coin” by a Japanese mega bank
    - Mitsubishi UFJ Financial Group Inc. is planning to introduce its own virtual currency by March 2018.
9. Cash

Demand for small coins - ¥1 and ¥5 - are decreasing these days due to the spread of digital payments.

After the consumption tax rate rose from 5% to 8% in 2014, small coins have been used less than expected after all.
Q&A / Discussion