Security Risks and Solutions in Emerging Payment Channels

Federal Reserve Bank of Chicago
2008 Payments Conference
Payments Fraud: Perception versus Reality
June 6, 2008

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Javelin Strategy & Research
Javelin is the leading independent provider of nationally-representative, quantitative research focused exclusively on financial services topics. Based on the most rigorous statistical methodologies, Javelin conducts in-depth primary research studies to pinpoint dynamic risks and opportunities.
Topics and Agenda

• Introduction and Overview
  – Identity Fraud: Perception and Reality
  – Who is at risk and what losses are they suffering?
  – How do attitudes towards fraud affect behavior?
  – Specifics to Mobile Banking and Contactless

• How may the risk dynamic change with the emergence of new technologies/products?
Panelist Sessions – Examples of Technologies and Products that are Changing the Dynamic:

- Check Imaging
- Decoupled Debit
- RFID

- Initial Q&A
- Audience Q&A
Identity Fraud Data
Identity Fraud Continues to Decline, Dropping 12% to $45 Billion

Overall Measures of Impact

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>US adult victims of identity fraud²</td>
<td>↓</td>
<td>8.1 M</td>
<td>8.4 M</td>
<td>8.9 M</td>
<td>9.3 M</td>
<td>10.1 M</td>
</tr>
<tr>
<td>Fraud victims as % of US population</td>
<td>↓</td>
<td>3.58%</td>
<td>3.84%</td>
<td>4.00%</td>
<td>4.25%</td>
<td>4.70%</td>
</tr>
<tr>
<td>Total one year fraud amount³</td>
<td>↓</td>
<td>$45 B</td>
<td>$51 B</td>
<td>$58 B</td>
<td>$57 B</td>
<td>$56 B</td>
</tr>
<tr>
<td>Mean fraud amount per fraud victim</td>
<td>↓</td>
<td>$5,574</td>
<td>$5,920</td>
<td>$6,497</td>
<td>$6,203</td>
<td>$5,503</td>
</tr>
<tr>
<td>Median fraud amount per fraud victim</td>
<td>=</td>
<td>$750</td>
<td>$750</td>
<td>$750</td>
<td>$750</td>
<td>$750</td>
</tr>
<tr>
<td>Mean consumer cost</td>
<td>↑</td>
<td>$691</td>
<td>$554</td>
<td>$446</td>
<td>$711</td>
<td>$582</td>
</tr>
<tr>
<td>Median consumer cost</td>
<td>=</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Mean resolution time (hours)</td>
<td>↑</td>
<td>26 hrs.</td>
<td>25 hrs.</td>
<td>40 hrs.</td>
<td>28 hrs.</td>
<td>33 hrs.</td>
</tr>
<tr>
<td>Median resolution time (hours)</td>
<td>=</td>
<td>5 hrs.</td>
<td>5 hrs.</td>
<td>5 hrs.</td>
<td>5 hrs.</td>
<td>5 hrs.</td>
</tr>
</tbody>
</table>


³ 2006, 2007 and 2008 dollar cost estimates have been smoothed using three-year averaging—refer to Methodology Section for details.
Q32: What is the approximate total dollar value of what the person obtained while misusing your information? by Q6: Was the existing card or card number a credit, debit, or prepaid card (such as a gift card)?

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### Existing Card Fraud by Type: Mean and Median Fraud and Consumer Costs

<table>
<thead>
<tr>
<th>Existing Card Type</th>
<th>Mean Fraud Amount</th>
<th>Mean Consumer Cost</th>
<th>Median Consumer Cost</th>
<th>Mean Resolution Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit</td>
<td>$6,172</td>
<td>$696</td>
<td>$0</td>
<td>25</td>
</tr>
<tr>
<td>Debit</td>
<td>$4,367</td>
<td>$739</td>
<td>$0</td>
<td>26</td>
</tr>
<tr>
<td>Prepaid</td>
<td>$2,776</td>
<td>$532</td>
<td>$13</td>
<td>7</td>
</tr>
<tr>
<td>All Existing Card</td>
<td>$4,914</td>
<td>$642</td>
<td>$0</td>
<td>23</td>
</tr>
</tbody>
</table>
Self-detection Leads to Faster Discovery of Fraud

Average Fraud Duration and Detection Time by Self-and External Detection

Q23: How did you first discover you were a victim of identity theft? Was it... by

Q24: From the time the misuse of your information first began, how long did it take you to discover it had been misused? Q16: Over what period of time was your information misused?

October 2007 n = 445
Base = All Fraud Victims

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Q23: How did you first discover you were a victim of identity theft? Was it... by

Q24: From the time the misuse of your information first began, how long did it take you to discover it had been misused? Q16: Over what period of time was your information misused?

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Consumers Express Strong Liking for New Data Mining Services

Fraud Protection Services that Consumers Are Most Likely to Purchase

- Credit monitoring service: 25%
- A service that scans public information: 21%
- Identity theft insurance: 20%
- Fraud alerts on your credit report: 18%
- Security freeze to prevent any granting of credit: 16%

Q46: When thinking about protecting yourself against identity fraud, which service would you be most likely to purchase? (Select one only)
Safety Is Highest Concern Among Consumers Regarding Contactless Payments

Concerns among Consumers Unlikely to Use Contactless Payments

- 65% I do not think it is a safe form of payment.
- 23% Contactless payments provide no benefits.
- 19% I am worried merchants that I usually shop with will not accept contactless payment options.
- 11% I never use credit or debit cards.
- 14% Other, please specify

Q23: You responded that you are not likely to use a contactless-enabled card or device. Please select the reasons why. (Select up to three)

September 2007, n = 1132

Base: Respondents unlikely to use a contactless-enabled card or device

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Consumer Outlook on Mobile Banking Centers on Uncertainty and Distrust

Mobile Banking Deemed as “Too Risky” by One-Third of Consumers

Q29: Some institutions believe that personal financial capabilities should be offered through portable devices such as advanced mobile phones or handheld computers. What is your opinion on this? (Select all that apply)

- This sounds too risky: 33%
- I would be willing to try it at least once: 16%
- This sounds too complicated: 15%
- This sounds like a waste of time or effort: 14%
- I would use it if it would save me more time: 10%
- I would use it to have more control over my finances: 7%
- I have used this and found it worthwhile: 2%
- I have used this but did not find it to be valuable: 1%
- Not sure: 34%

n = 2,230
Base: All consumers
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The “Reality” of Mobile Security: Mobile Viruses and Other Imminent Threats

Identity Theft Dominates Consumers’ Mobile Banking Concerns

Q40: What are your main concerns surrounding mobile banking? (Select up to three)

- My personal information could be more easily obtained if my mobile phone was lost or stolen (69%)
- My account information could be compromised through hackers spyware or viruses (62%)
- My wireless plan makes data access too expensive (28%)
- My wireless service is too unreliable to conduct transactions (14%)
- Other please specify (9%)

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Two out of Five Consumers Will Select a Platform Based on Security

Q33: What was your primary reason for choosing the option you selected above? (Select one only)

- I feel it is more secure than the other options: 40%
- I am already familiar with this method: 20%
- It would be the least expensive option (with my wireless plan): 11%
- It offers all the functions I look for in online banking: 9%
- It could store payment information on my phone: 5%
- I would be able to integrate it with other financial software: 3%
- Other please specify: 11%

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Mobile Internet Users Are Less Hindered by Security, More Focused on Time-Saving Capability

Security Is Less of a Concern among Mobile Internet Users

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would be willing to try it at least once</td>
<td>30%</td>
</tr>
<tr>
<td>I would use it if it would save me more time</td>
<td>25%</td>
</tr>
<tr>
<td>This sounds too risky</td>
<td>24%</td>
</tr>
<tr>
<td>I would use it to have more control over my finances</td>
<td>16%</td>
</tr>
<tr>
<td>This sounds too complicated</td>
<td>11%</td>
</tr>
<tr>
<td>This sounds like a waste of time or effort</td>
<td>6%</td>
</tr>
<tr>
<td>I have used this and found it worthwhile</td>
<td>5%</td>
</tr>
<tr>
<td>I have used this but did not find it to be valuable</td>
<td>2%</td>
</tr>
<tr>
<td>Not sure</td>
<td>20%</td>
</tr>
</tbody>
</table>

Q29: Some institutions believe that personal financial capabilities should be offered through portable devices such as advanced mobile phones or handheld computers. What is your opinion on this? (Select all that apply)

Q26: Which of the following mobile phone features do you use?

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