Non-Banks in the Payment System: Innovation – Commentary and Questions

May 3, 2007

Presented to:
**Themes**

- Payments System innovation resulted directly from the introduction of personal computing and the internet.
- Network effects influence payments innovations: introductory subsidies; switching costs, required interoperability, learning costs.
- Established firms are better at incremental innovations; radical innovations are more likely from new entrants.
- Consumer demand depends on sunk costs, perceived benefit, and reliability/security concerns.
- Innovations in payments have been made by firms of all types and sizes.

**Discussion Points**

- Payments System innovations have exploded since the 1960's, driven mainly by networked computing.
- Many innovations address specific niches, but may struggle to achieve mass adoption.
- Few "radical" payments innovations are new; most are derivative of existing forms.
- Payments innovations are generally supply driven; in many, the value proposition is suspect for one or more stakeholders.
- Mobile banking/payments adoption will likely depend on bank/non-bank partnerships.
## Payment Innovations Framework

<table>
<thead>
<tr>
<th>Category</th>
<th>Nature of Innovation</th>
<th>Sustaining Innovation (Continues Existing Model)</th>
<th>Disruptive/Radical Innovation (New Model)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td></td>
<td>• Signature debit • Keep the Change</td>
<td>• Credit card • ATM • EZ Pass (automated toll collection)</td>
</tr>
<tr>
<td>Process</td>
<td></td>
<td>• Risk Management (credit, fraud, collections) • IVR, VRU • Check Imaging</td>
<td>• Electronic bill payment • Remote banking</td>
</tr>
<tr>
<td>Utility</td>
<td></td>
<td>• PIN POS debit</td>
<td>• Google • PayPal</td>
</tr>
</tbody>
</table>
Evaluating Payment Innovations

Payments Innovations Can Be Evaluated Along the Following Framework

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSUMER / USER EXPERIENCE</td>
<td>• To whom is the product marketed? How is this done?</td>
</tr>
<tr>
<td></td>
<td>• Is the product easy to understand and use?</td>
</tr>
<tr>
<td></td>
<td>• Is it a new application or is it derivative of existing systems?</td>
</tr>
<tr>
<td></td>
<td>• What incentives are offered to adopt and use?</td>
</tr>
<tr>
<td>VALUE PROPOSITION</td>
<td>• Does the product solve a consumer problem?</td>
</tr>
<tr>
<td></td>
<td>• Is it faster, cheaper, easier, or safer than incumbent?</td>
</tr>
<tr>
<td></td>
<td>• Does it improve system efficiency, reallocate economics, or increase systemic costs?</td>
</tr>
<tr>
<td></td>
<td>• Which participants will &quot;lose&quot;, and how will they respond?</td>
</tr>
<tr>
<td>SOURCE OF COMPETITIVE ADVANTAGE</td>
<td>• Price</td>
</tr>
<tr>
<td></td>
<td>• Technology</td>
</tr>
<tr>
<td></td>
<td>• Process</td>
</tr>
<tr>
<td></td>
<td>• Delivery</td>
</tr>
<tr>
<td></td>
<td>• Service level / performance (e.g. reduces fraud)</td>
</tr>
<tr>
<td>SUSTAINABILITY</td>
<td>• Resources</td>
</tr>
<tr>
<td></td>
<td>• Partners</td>
</tr>
<tr>
<td></td>
<td>• Intellectual Property</td>
</tr>
</tbody>
</table>
Evaluating Payment Innovations

Traditional Transaction:
- Retail purchase: $100.00
- Acquirer: $4.10
- Association: $1.80
- Issuer: $14.10
- Merchant: $80.00

Innovation Transaction:
- Retail purchase: $100.00
- Acquirer: $0.41
- Association: $0.18
- Issuer: $1.41
- Merchant: $98.00

Qualitative Assessment:
- Facilitates credit card use, but cumbersome to enroll.
- Fairly easy to accept.
- Difficult dispute and adjustment process.
- Servicing issues challenged.
- Modest incremental revenue likely.
- Difficult process for disputes, etc.
- Strong product for those in the micropayments industries. Good flexibility and versatility.
Mobile payments fall into two main categories:

<table>
<thead>
<tr>
<th>Primary Use</th>
<th>SMS</th>
<th>NFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader</td>
<td>PayPal</td>
<td>Various</td>
</tr>
<tr>
<td>Value Proposition</td>
<td>Security</td>
<td>Convenience</td>
</tr>
<tr>
<td>Uses</td>
<td>P2P, Bill Payments</td>
<td>POS Purchase</td>
</tr>
<tr>
<td>Challenges</td>
<td>Convenience, Learning curve</td>
<td>Security, Acceptance</td>
</tr>
</tbody>
</table>

Sources: Mobile World, Research & Markets, Juniper
Mobile Payments Will Likely Require Cooperation Between Mobile Network Operators And Payments Networks

<table>
<thead>
<tr>
<th>PAYMENT NETWORKS</th>
<th>MOBILE NETWORK OPERATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increase transaction volume</td>
<td>• Increase number of subscribers and users' loyalty</td>
</tr>
<tr>
<td>• Financial institution/funding account connectivity</td>
<td>• Millions of endpoints</td>
</tr>
<tr>
<td>• Robust risk management and rule sets</td>
<td>• Ability to transmit robust content</td>
</tr>
<tr>
<td>• Widespread acceptance</td>
<td></td>
</tr>
<tr>
<td>• Short message format; limited content</td>
<td>• Security for financial transactions</td>
</tr>
<tr>
<td>• Relatively few endpoints</td>
<td>• Merchant acceptance</td>
</tr>
<tr>
<td></td>
<td>• Lack of funding source</td>
</tr>
</tbody>
</table>