Turnkey ATM Services
Your Single Provider for ATM Hardware, Software and Services

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Bret Leary, Account Executive, NCR
May 24, 2017
ATM Industry Transformation
A Rapidly Changing ATM Industry Becoming Increasing Challenging

The Challenges

- Meeting an Evolving Consumer Experience
- Upgrading EOL Operating Systems
- Increased Regulatory Compliance, Guidelines and Mandates

Source: FIS Internal Research, 2017
The Current State of the ATM
Why the ATM is a Vital Self-Service Banking Channel for Consumers

NAMER ATM CASH WITHDRAWALS
Why the ATM is still a vital self-service banking channel for consumers...

Every Year
Volumes: 6.4 billion
Values: $775 billion

Every Hour
Volumes: 730,000 million
Values: $88.4 million

Every Minute
Volumes: 12,170
Values: $1.5 million

Every Second
Volumes: 200
Values: $24,550

Equivalent of 17% of world’s GDP ($77 trillion) is withdrawn in cash from ATMs each year!

Consumer expectations of financial institutions have never been higher. Cash in circulation is increasing and continues to be the primary source for around 85% of global payments. This is accelerating consumer’s demand for fast, secure and convenient access to cash.

$775 billion dollars were withdrawn from NAMER ATMs in 2015

Source: NCR, 2017
Customer Channel Demands

Even as new channels increase and old channels decrease, ATM demand continues to grow.

Regulatory and Security

Legislative change or a need to implement the latest security update

Security and regulation PCI DSS, EMV, Migration towards Windows 7 to ensure future proof and longevity.

Operational Efficiency

Drive down cost of running the ATM channel – older ATMs tend to have higher SLM rates

Migrate costly teller transactions like deposits from the teller line to the ATM channel

Improved Consumer Experience

Deliver an enhanced consumer experience – stand out from the crowd, attract more consumers and drive more transactions

Increase footfall and revenue; software is increasingly important – advertising and personalization
Business Drivers for Financial Institutions
Attract more customers, enhance the consumer experience, drive down running costs and generate revenue

Enhance the Consumer Experience

• Meet consumer demand with 24/7 availability
• Intelligent deposit with mixed media
• Deposit availability 24/7 – key for small business customers
• Instant access to cash
• Trusted transaction, immediate credit and image on receipt
• No need to fill out deposit slips or tally amounts

Operational Efficiency & Revenue Generation

• Migrate an average of 40% of deposit transactions to your ATMs
• Save or repurpose $99,000 per branch per year
• Generate $4,000 additional revenue from your ATMs, per branch per month
• Reduce line times by 75%, experience a transaction that is 3x faster than at a teller
• Release Branch Staff to sell

Ensure Security and Compliance

• ADA Compliant
• Windows 7
• Software Distribution Service ensures current SW patches to help maintain PCI compliance
• EMV Ready
• Endpoint Security Management
• Skimming Protection Solution
Exclusive partnership to benefit FIS clients
Turnkey ATM services from FIS and NCR

• Fully managed end-to-end ATM offering
• Combined value from two industry leaders: FIS and NCR
• Unmatched combination of ATM processing, hardware, software, maintenance, cash management and support
• Enhanced cardholder ATM experience
• Streamlined support
• Simplified billing/contracting
• Reduced compliance burden
## FIS Turnkey ATM Services Snapshot

**A Full Suite or A La Carte**

<table>
<thead>
<tr>
<th>Hardware Procurement</th>
<th>Maintenance Services</th>
<th>Managed Services (NCR ATMs Only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS22 Lobby Cash Dispenser</td>
<td>First Line Maintenance (FLM)</td>
<td>Software Distribution</td>
</tr>
<tr>
<td>SS32 WU Lobby Intelligent Deposit</td>
<td>Second Line Maintenance (SLM)</td>
<td>Endpoint Security</td>
</tr>
<tr>
<td>SS34 TTW WU/DU Intelligent Deposit</td>
<td>Software Maintenance</td>
<td>BIOS Password Management</td>
</tr>
<tr>
<td>SS38 Island DU Intelligent Deposit</td>
<td></td>
<td>Incident Mgmt/Predictive Services</td>
</tr>
<tr>
<td>SS23 WU/FS Interior Cash Dispenser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS27 WU Exterior TTW/WU Cash Dispenser</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SelfServ 80 Series ATMs (New in 2017)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Limitations of Older ATM Estates (Personas)
Modernize to drive transaction migration, lower the cost to serve and generate revenue

<table>
<thead>
<tr>
<th>Security Vulnerabilities</th>
<th>Reduced Availability</th>
<th>Customer Dis-satisfaction</th>
<th>No Upgrade Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>The technology is aged and more vulnerable to emerging attack techniques than NCR SelfServ technology.</td>
<td>On a global measure older ATMs generate more incidents overall and more out of scope service calls</td>
<td>Your ATM is the window to your business – are you presenting the best possible brand image?</td>
<td>Ageing ATMs can offer limited transaction capabilities</td>
</tr>
<tr>
<td>• PDEE encryption is not as good as NCR SelfServ encryption</td>
<td>• Parts limitation places a natural expiry date on older ATMs</td>
<td>• Higher number of failed consumer transactions</td>
<td>• Business needs change, today’s ATMs need to be able to evolve as businesses grow and diversify</td>
</tr>
<tr>
<td>• Personas EPP is not as secure as the EPP3</td>
<td></td>
<td>• Dated and inconsistent user interface</td>
<td>• No future upgrade path on older ATMs</td>
</tr>
<tr>
<td>• Personas SPS does not have the same functionality as NCR SelfServ SPS etc.</td>
<td></td>
<td>• Inconsistent consumer experience vs. modern ATMs</td>
<td>• Restricts new revenue generating opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Brand and Consumer experience</td>
<td>• Consumers demand more transactions in all locations</td>
</tr>
</tbody>
</table>
NCR SelfServ 80 Series
Inspired and designed around human senses

**Transform**
- **Up to 50%** reduction in branch operating costs from deployment of NCR interactive teller and assisted services
- **Up to 31 hrs** increase in teller availability per week in moving consumers to the ATM from teller

**Attract**
- **$250 Million** the total annual impact to financial institutions globally from not providing a good customer experience
- **6 to 7 Times** more expensive for financial institutions to attract new customers than keep existing ones

**Engage**
- **#1** The ATM is still ranked as the #1 self-service channel and way to interact with a bank even amongst smartphone users
- **19”** Deliver tailored user experiences on up to 19” multi-touch enabled infinity displays

Source: NCR, 2017

New 2017 NCR ATM Hardware
ATM attacks can cost financial institutions more than 1,000 per ATM per year.

Card skimming costs ATM deployers in excess of $2.4 Billion – the most frequent form of attacks. Flush SPS card reader helps to combat.

An improvement of 10% in ATM reliability seen with NCR SelfServ vs. Personas for some customers.

Improved uptime in excess of 99.3% witness from some customers using new SelfServ ATM family.

Reduction in stocking costs for dispenser parts. A dispense module featuring 7 key every unit item field replaceable units.

Examples seen of above a 40% reduction in service related incidents seen on newer SelfServ ATMs than ageing ATMs.

New 2017 NCR ATM Hardware

Source: NCR, 2017
## SelfServ Family of ATM Hardware Solutions

### Functionality Supported

<table>
<thead>
<tr>
<th>Models</th>
<th>SS22</th>
<th>SS32</th>
<th>SS34</th>
<th>SS38</th>
<th>SS23</th>
<th>SS27</th>
<th>SS81</th>
<th>SS82</th>
<th>SS83</th>
<th>SS84</th>
<th>SS87</th>
<th>SS88</th>
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</thead>
<tbody>
<tr>
<td>Cash Dispense</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Intelligent Check Deposit</td>
<td>✔</td>
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<tr>
<td>Intelligent Cash &amp; Check Deposit</td>
<td>✔</td>
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<tr>
<td>Interactive Teller Ready Hardware Available</td>
<td>✔</td>
<td>✔</td>
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</table>

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### SelfServ Family of ATM Hardware Solutions

#### Type of ATM

<table>
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<tr>
<th>Models</th>
<th>SS22</th>
<th>SS32</th>
<th>SS34</th>
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<tbody>
<tr>
<td>Interior</td>
<td>✔</td>
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<tr>
<td>Exterior</td>
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<td>✔</td>
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<tr>
<td>Drive-Up</td>
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<tr>
<td>Walk-Up</td>
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<td>Freestanding</td>
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<tr>
<td>Through the Wall</td>
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## SelfServ Family of ATM Hardware Solutions

### Key Features

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<th>SS84</th>
<th>SS87</th>
<th>SS88</th>
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</thead>
<tbody>
<tr>
<td>Display</td>
<td>1</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
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<td>Security</td>
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<td>3</td>
<td>2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>F</td>
<td>F</td>
<td>R</td>
<td>F</td>
<td>R</td>
<td>F/R/S</td>
<td>F/R/S</td>
<td>F/R</td>
<td>F/R/S</td>
<td>R</td>
<td>F/R/S</td>
<td></td>
</tr>
<tr>
<td>Software</td>
<td>W7/A5</td>
<td>W7/A5</td>
<td>W7/A5</td>
<td>W7/A5</td>
<td>W7/A5</td>
<td>W7/A5</td>
<td>W7/A7</td>
<td>W7/A7</td>
<td>W7/A7</td>
<td>W7/A7</td>
<td>W7/A7</td>
<td>W7/A7</td>
</tr>
</tbody>
</table>

### Displays

1 = 15” Touchscreen
1 = 15” Multi-Touch or FDK
2 = 15 or 19” Multi-Touch

### Security

1 = SPS, Cash Slot, & Portrait Camera Enabled
2 = Flash SPS, Cash Slot, & Portrait Camera Enabled
3 = SPS & Camera based pocket monitoring

### Service

F = Front
R = Rear
F/R/S = Front/Rear/Side
F/R = Front/Rear

### Software

W7/A5 = Windows 7 & Aptra Edge 5.0
W7/A7 = Windows 7 & Aptra Edge 7.0
ATM Hardware Lease Alternative

Benefits of Lease vs. Purchase

• **Lowest Total Cost of Ownership**
  – Lowest Cost of Funds
  – Less Expensive than a purchase
  – Additional Source of Capital
  – Conserves your Working Capital
  – Preserves Liquidity, Lines of Credit
  – Lease payment is less than debt financing
  – Match lease term to product warranty to reduce on-going maintenance costs
  – Avoid Potential Book Loss
  – Eliminate unnecessary end-of-life costs – data destruction, product disposal, HIPAA compliance
  – Budget Consistency
  – No Issue with CapEx Constraints

• **Greatest Flexibility**
  – Built-In LifeCycle Asset Management
  – “Pay for What you Use”
  – Avoid Technological obsolescence
  – Match financing term to useful asset life
  – Acquire more equipment for fewer dollars
  – Easy upgrades to existing leased assets
  – Tech Refresh in all leases
  – One Vendor – one payment

Coming to FIS Turnkey Services in 2017
ATM Hardware Lease Alternative

Leasing Sample

• Total Solution Cost = $1,092,752
  – Equipment $797,382
  – Software $147,030
  – PS, Freight, Installation $148,320

• Term of 5 Years
  – Flex Lease: 60 Payments @ $16,155
  – Present value of lease payments $969,300

• 11.3% Savings by Leasing vs Purchasing

Coming to FIS Turnkey Services in 2017
## Maintenance Services

**FLM, SLM, and Software Maintenance**

<table>
<thead>
<tr>
<th>First Line Maintenance (FLM)</th>
<th>Second Line Maintenance (SLM)</th>
<th>Software Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance not in scope of SLM services.</td>
<td>Remedial hardware maintenance to resolve a fault.</td>
<td>Maintenance for problems causing the software not to function.</td>
</tr>
<tr>
<td>Examples include a card, currency, paper, receipt or audit roll jams.</td>
<td>Examples remedial hardware maintenance, replacement parts, and preventative maintenance</td>
<td>Service will record, investigate, and fix software problems.</td>
</tr>
<tr>
<td>Manage costs through predictable service costs and reduced or eliminated out-of-scope charges.</td>
<td>Manage costs through predictable service costs and reduced or eliminated out-of-scope charges.</td>
<td>For complex problems, can often deploy temp fixes until long-term fix is found to keep ATM operational.</td>
</tr>
<tr>
<td>Proactive and preventive problem resolution to reduce the change of a later disruption.</td>
<td>Proactive and preventive problem resolution based on the module needing repair.</td>
<td>Access to point-and-patch releases with fixes and minor functionality enhancements.</td>
</tr>
</tbody>
</table>
Emerging New Logical Threats

- Black Box
- Malware in the Network
- Malware on the ATM
The Growth and Geographic Expansion of Logical Attacks Since 2013 Requires Urgent Action

ATM Attacks: Current State

The Growth and Geographic Expansion of Logical Attacks Since 2013 Requires Urgent Action

Timeline of Fraud reported

Source: NCR, 2017
## Managed Services Security

Protect Your Customers and Your Enterprise from ATM Network Attacks

<table>
<thead>
<tr>
<th>Customer Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hackers are increasingly sophisticated and aggressive</td>
<td>Managed Security</td>
</tr>
<tr>
<td>Threats emerge faster than customers can respond</td>
<td>Protection from online, offline and black box attacks</td>
</tr>
<tr>
<td>It is extremely difficult to hire security experts, even more difficult to find experts that understand ATMs</td>
<td>White listing, Secure BIOS and SW patches</td>
</tr>
<tr>
<td>Support costs are increasing when ATMs are locked down</td>
<td>Integrated with SLM operations to maintain availability</td>
</tr>
<tr>
<td>Regulatory requirements are increasing every year</td>
<td>Delivered by security experts, executing best practice, tools and technology</td>
</tr>
</tbody>
</table>

### Risk

- People
- Process
- Technology

### Cost
## Managed Services Security

### ATM Attack Vectors

<table>
<thead>
<tr>
<th><strong>Online Malware Attack</strong></th>
<th><strong>Offline Malware Attack</strong></th>
<th><strong>Black Box Attack</strong></th>
</tr>
</thead>
</table>
| ▪ The ATM is Online when the ATM is up and running in it’s normal state and the operating system (Windows) is running | ▪ Attackers can make the ATM hard disk Offline either by :-  
  ▪ Inserting bootable removable media such as a USB or DVD into the ATM and re-booting the ATM to this media (which is running it’s own Operating System) OR  
  ▪ Removing the ATM Hard Disk and mounting it as a secondary drive attached to a laptop or other device  
  ▪ When the hard disk is Offline attackers can:  
    ▪ View and modify the contents/files of the hard disk  
    ▪ Copy malware onto the hard disk  
    ▪ Disable Solidcore or other anti-malware solutions  
    ▪ Copy sensitive information from the hard disk | ▪ Criminal gains access to the dispenser cable inside the ATM  
  ▪ Bypasses the ATM’s core processor and connects an electronic device to the cash dispenser  
  ▪ Send unauthorized commands to dispense the cash from the ATM |
| ▪ Malware can be added to the ATM when it is in this state  
  ▪ If a USB device is inserted and autorun is enabled  
  ▪ Accessing the windows desktop with a keyboard or mouse and executing malware from a local drive or URL  
  ▪ Accessing administrator log in  
  ▪ Compromising the locked down account (SSTAuto1)  
  ▪ From the network | | |
## Managed Services Security

Security Solutions (Security Bundle Suite or A La Carte)

<table>
<thead>
<tr>
<th>Endpoint Security</th>
<th>Secure BIOS</th>
<th>Security Patch Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Prevents online malware attacks and related security breaches</td>
<td>- Protects against offline malware attacks</td>
<td>- Critical defense against operating system vulnerabilities that firewalls and anti-virus might not protect</td>
</tr>
<tr>
<td>- Whitelisting technology</td>
<td>- Secures BIOS with a password</td>
<td>- Remote installation of Microsoft Security patches</td>
</tr>
<tr>
<td>- Only authorized code and updaters are allowed to execute</td>
<td>- Prevents booting from external device, a critical defense</td>
<td>- Includes APTRA Edge updates where applicable</td>
</tr>
<tr>
<td>- NCR provides secure infrastructure to manage security policies</td>
<td>- Remote technology enables no-touch password implementation and maintenance</td>
<td>- Simplified update management with NCR domain expertise, secure infrastructure, tools and procedures</td>
</tr>
<tr>
<td>- Dedicated security experts monitor all the events generated</td>
<td>- Significant cost savings vs on-site BIOS lock down by a tech</td>
<td>- Audit reports to aid in compliance</td>
</tr>
<tr>
<td>- Provide audit reports to the FI to aid in compliance initiatives</td>
<td>- Prevents manual errors and sharing of passwords</td>
<td></td>
</tr>
</tbody>
</table>