What Differentiates STAR Network From the Rest…

STAR provides market leading fraud solutions that help protect your brand.

STAR + First Data = the hub of the payment ecosystem with relationships.

STAR’s competitive pricing & simple, transparent fee structure allow you to grow net income & improve your bottom line.

STAR is the only Network with market share to provide you a viable alternative to the Global Brand Networks.

STAR is investing for our members. STAR is an industry leader in all electronic payment areas, including EMV® and tokenization.
The Hub of the Payment Ecosystem
First Data Is the Hub of the Payments Ecosystem

A 360° Degree View of Payments
Yields Advantages in Scale, Experience & Coverage

Merchants

- Largest Merchant Processor
  - Critical to have a partnership with the world’s largest merchant processor post-Durbin due to power of routing decisions
  - Solutions for small business & the largest merchants in the world

Network

- 360° network routing your transactions between your customers
  - Expanding Beyond PIN to All Debit Transactions
  - Expanded Fraud Capabilities
  - E2E

Financial Services

- One system unifying all your customers
  - Retail Private Label
  - Credit
  - Signature Debit
  - PIN Debit
  - Commercial Accounts
  - Loans

Additional Services

- Highly customized services for your business
  - Security Solutions
  - Mobile Solutions
  - Innovative Partnerships With Technology Disruptors
  - Alternative Payment Types

First independent debit network to support Apple Pay®
STAR Network Background

- Shared ATM access in 1979
- Combination of 10+ regional U.S. debit networks
- PIN-secured purchasing in 1983
- Thousands of members, from community financial institutions to global banks
- Nationwide ATM & POS acceptance
- One in three debit cards are STAR eligible
STAR Network by the Numbers*

120 Million
Cards

376,000
ATMs

975,000
PIN Accepting Merchants

* 2016 statistics
Investing for STAR Network Members
STAR Network Expansion Strategy

Our payment acceptance enables all debit transactions & supports competition

CHANNELS:
- ATM
- In-store POS
- Internet eCommerce
- Biller Websites, Kiosks, IVR
- In-App (Issuer or Acquirer Mobile Payment Applications)

DEVICES:
- Magnetic Stripe Cards
- Chip Cards
- Companion Cards (i.e., Fobs, Mobile)
- Mobile Devices (Using Secure Elements or Secure Database (e.g., Cloud-Based))
- Desktop Computers

CARDHOLDER VERIFICATION METHODS:
- PIN
- Signature
- PINless (No CVM)
- Secure Authentication Options for Card-not-Present (CNP) Payments
STAR PINless POS

Quicker, hassle-free checkout experience for purchases under $50

STAR Member Need:

Financial institutions are looking for better economics & increased revenue-generating purchasing behavior to replace cash

Benefits:

- Routing choice for “buy & go” purchases
- Allows consumers to skip the PIN pad on POS purchases of $50 or less
- Flexible for merchant mobile POS card readers & consumer mobile wallets
Shift to Card-Not-Present Demands Full-Service Debit

PIN-Debit Market Share

- Other: 24%
- Maestro® (MA): 30%
- STAR®: 16%
- Interlink® (V): 30%

Signature Debit Market Share

- MasterCard®: 35%
- Visa®: 65%

Merchants accept Signature versus PIN: 10:1

Source: Company documents, Barclays research

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STAR Access\textsuperscript{SM}
Routing choice for signature debit

**STAR Member Need:**
- Competitive choice & enhanced revenue opportunities
- Scalable functionality & defined implementation plan

**Benefits:**
- Full debit support - all CVMs, devices & markets
- Enhanced single message & new dual message capabilities
- New fraud prevention solutions
- Transparent, simplified pricing
- Fully integrated back office processes
- Tools for interchange, reconciliation/settlement, dispute processing & reporting
**STAR PINless / Signature Merchant Adoption**

First Data is leveraging its vast merchant distribution to gain merchant adoption for all STAR CVM types.

<table>
<thead>
<tr>
<th>Merchant Channel</th>
<th>PINless</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMB</td>
<td>~ 250,000 live today</td>
<td>250,000 April – Sept 2017</td>
</tr>
<tr>
<td>National</td>
<td>8 top retailers now accepting</td>
<td>Pilot in Q4 2017</td>
</tr>
</tbody>
</table>
Strategic Areas of Focus

1. **GROW**
   - Acceptance
     - More PIN Debit
     - Higher routing priority
     - New transactions
       - PINless
       - Signature
       - Disbursements

2. **EXPAND**
   - Participation
     - BIN participation
     - M&A retention
     - Broaden merchant categories

3. **DEVELOP**
   - Segments
     - Travel, Insurance, Wholesale
     - Better brand acceptance
     - B2C, B2B
     - Faster Payments
     - Block chain
## Money Movement Represents Diversified Growth

<table>
<thead>
<tr>
<th>Transaction Type</th>
<th>2016</th>
<th>2017*</th>
<th>2019*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill Payment</td>
<td>1.6%</td>
<td>3%*</td>
<td>7%*</td>
</tr>
<tr>
<td>eCommerce</td>
<td>1.8%</td>
<td>3%*</td>
<td>10%*</td>
</tr>
<tr>
<td>Funds Transfer</td>
<td>1.2%</td>
<td>2%*</td>
<td>4%*</td>
</tr>
</tbody>
</table>

*STAR® Network projections

### DEVELOP

**Segments**

- Travel, Insurance, Wholesale
- Better brand acceptance
- B2C, B2B
- Faster payments
- Blockchain
# STARsf® Surcharge-free Value Proposition

Attract & retain deposit account customers with one of the largest surcharge-free networks in the U.S.

| **Nearly 50,000* ATMs, including ATMs in leading national & regional retailers** | **Relationships with nation’s top retailers**  
**Allpoint® Network partnership** |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not a Shared Network</strong></td>
<td><strong>Your ATMs are not required to participate, which enables you to maintain your surcharge income</strong>**</td>
</tr>
<tr>
<td><strong>Branch expansion without the branch itself</strong></td>
<td><strong>Expand your immediate geographic area &amp; enhance cardholder satisfaction</strong></td>
</tr>
</tbody>
</table>
| **Levels the playing field against national institutions** | **Cost-effective way to compete with national FIs that have large ATM footprints**  
**Avoid building & maintaining your own ATM footprint** |

* ATM count subject to change
** Set up your own ATMs to charge surcharge fees for non-customers

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Network Highlights & Benefits

Nationwide ecosystem of ATMs via our select retail partners & Issuers

Benefits:

☑️ It’s simple to get started
☑️ No new technology build
☑️ Can be up & running in 30 days
☑️ Cardholders use existing card
☑️ Flexible, predictable cost structure vs. ATM deployment

Many of the largest national retailers participate in STARsf®
What is STARsf® Surcharge-free?

A STAR® program that enables deposit account holders to access over 50,000* ATMs without paying surcharge fees

Easier way to deliver ATM footprints:

- Turnkey program for STAR Members
- Flexible ATM & cardholder participation
- Uses existing STAR Network infrastructure
- Easy & low-cost implementation

A convenient, surcharge-free solution represents an immediate value for FIs
Increase Network Revenue
Hidden Fees Can Escalate Pricing & Impact Bottom Line

Pain Points

Issuers should look at transaction fees billed daily, weekly & monthly as well as quarterly assessments. Fee categories may be identified as:

- Purchase or transactions fees, including pre-authorization switch fees, VIP authorization fees & completion switch fees
- Network usage fees; report generation & SMS file transmission
- Brand or royalty support fees
- Service fees applied to issuers – based on card base and/or transactions

STAR® Network Solution

- All-in pricing – straightforward & understandable (Some networks have multiple fees that need to be uncovered, considered & analyzed)
- STAR brings choice to the debit market which fosters competitive pricing
Protecting STAR Members’ Brands
Our Commitment:
Deliver a best-in-class solution that helps STAR® Members reduce fraud costs & protect their customers

Differentiators
Speed of Learning  Breadth of Data  Feedback Loop

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STAR Network Helps Protect Your Brand & Your Customers

New network wide fraud solution addresses risk associated with signature & other CVM transactions

- Provides better insights on potential fraud & false positives, which helps approve more good payments & prevent fraudulent ones
- Utilizes real-time machine learning technology to continually analyze data
- Smart tools constantly learn & adapt to new fraud behaviors & trends

Pain Points:

1. More payment types introduce more fraud
2. Global brands support their brand, not mine
3. Lack of differentiation with a debit duopoly
Fraud Scoring Functionality

Help financial institutions gauge risk potential of every STAR Network transaction with indicators within real-time authorization that include high fraud account detection & low false positive rates

**MACHINE LEARNING**
- **Best** approach & real-time evaluation
- Models address behavioral patterns & continue learning
- Real-time mode model updates; self-discover patterns

**SCORE USAGE**
- Score in real-time authorization strategy rules
- Incorporate into fraud detection products and/or case management systems
- Feed into reporting tools trends & analytics

**DETECTION / ACCURACY**
- Identify fraud in real time
- High detection rate with low false positives
- Detect more fraud: "the long tail of fraud"

**DATA SOURCES**
- Leverage the breadth of information available within First Data
  - STAR Approvals & Declines
  - First Data Acquiring Data*
  - Confirmed Fraud & Fraud Chargebacks
  - STAR Negative File
  - 3rd Party Data**
  - Opted-In Issuer Data

* Data used with permission
** Future releases may include additional datasets such as certain non-payment data
Machine learning is at the core of STAR, monitoring live transactions from any channel, wherever your customers choose to engage.

Every day, STAR protects:

- $2B scoring volume
- 30M total transactions
- 3,000 transactions per second
Production Model Performance Metrics

Multiple data sources give the model the ability to identify fraudulent behaviors across platforms & more accurately predict fraud.

<table>
<thead>
<tr>
<th>Key Performance Metrics</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transactions Scored</td>
<td>100%</td>
</tr>
<tr>
<td>Score Distribution in Fraud Threshold</td>
<td>5%</td>
</tr>
<tr>
<td>Detection Rate Transactions</td>
<td>64%</td>
</tr>
<tr>
<td>Detection Rate Money</td>
<td>77%</td>
</tr>
<tr>
<td>False Positive Rate</td>
<td>4.86%</td>
</tr>
</tbody>
</table>

Models trained with:
- STAR platform transactions
- Select acquiring data*
- Confirmed fraud
- Fraud chargebacks
- Declined transactions with fraud reason code

SPFS model review & latest performance report is available to STAR Network Members only.

* Data used with permission
Data That Drives the Score

STAR’s exclusive, in-house machine learning models utilize substantial portions of participating First Data Merchant Acquiring and STAR Network transaction data to generate predictive fraud scores. Future releases of STAR Fraud Score may include additional opted-in datasets such as issuing transactions and certain non-payment data.
The STAR® Network Difference…

Economic Benefits
- Higher net income on your debit transactions
- Transparent, simple pricing

Identify Fraud in Real-time
- STAR’s fraud score in all authorization messages allows integration into fraud decisioning tools
- 360° view of the payment ecosystem

First Data Advantage
- The latest in payments & security technologies
- Laser focus on debit & needs of financial institutions

Ease of Implementation
- Simple 2-page agreement
- Add your BINs to STAR
Next Steps
Roles & Responsibilities

JHA Sales Teams:

- Speak to prospective STAR Network clients
- Present the STAR Network
- Send STAR Network Member Agreement and Pricing
- Send executed agreements to STAR Network Sales Team

STAR Network Sales Team:

- Assist with STAR Network prospects as needed
- Prepare standard STAR Member Agreement
We Love Debit!

Thank You for Your Partnership
Questions?

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