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Embracing Change in Payments

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Payments Landscape is transforming

Ongoing Transformation

- Faster Payment adoption
- ISO 20022 adoption
- New Entrants/Non Bank Players
- Regulatory Change – PSD2

Drivers of competiveness
- Convenience
- Superior client experience
- Adjacent value added services
- Price

Dominant Cross Border Payment Model

- E-commerce growth
- Globalization
- Customer Expectations - Millennials
- Regulator consumer advocacy
- Technological advancements

Cross Border Payments continue to grow primarily with:
- Settlement through the Correspondent Bank network
- Messaging through SWIFT

gpi
Evolving the current cross border payment model

Customer Expectations - Millennials
Overview

Correspondent Banking Opportunities

What is gpi?

Client Implications

Correspondent Banking Pricing implication
What is the objective of GPI

SWIFT global payment innovation (gpi) is an initiative to deliver an enhanced cross-border payments experience for the underlying customer through a sustainable model for the suppliers (banks), addressing the challenges that stem from the lack of transparency on the status of payments.

Address lack of transparency on cost, status and settlement time

- Enhanced tracking and reconciliation
- Better visibility on payment charges

Faster and more efficient model

- Reduce inefficiency
- Improve post transaction servicing

Evolution for sustainability

- Evolve the Correspondent Banking model
- Foundation of next generation value proposition
I got a confirmation that beneficiary received $39,970.

I was informed that the $39,970 I received corresponds to the $40,000 that was sent by the sender.
GPI Timeline

Q4’2015

Official Launch
46 Banks sign-up

Q3’2016

Q1’2017

Q2’2017

Q3’2017

Q4’2017

Live gpi Traffic
11 Banks live
92 Committed

~30 banks live

~25 banks live
Fedwire supports GPI
gpi tracker and API live

~33 banks live
CHIPS supports gpi

Citi’s GPI Status Today
• Live on Citi London and NY on following currencies:
  o USD
  o GBP
  o EUR
• Processing 3,000 transactions per day
• Member of: Initiative Group, Pilot Group and Vision Group

API “Go Live” Timeline

<table>
<thead>
<tr>
<th>Operation</th>
<th>Pilot</th>
<th>Live</th>
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</thead>
<tbody>
<tr>
<td>Updating the status of a payment transaction</td>
<td>May 6</td>
<td>May 20</td>
</tr>
<tr>
<td>Getting a payment transaction</td>
<td>May 6</td>
<td>May 20</td>
</tr>
<tr>
<td>Getting the history of payment transactions</td>
<td>May 20</td>
<td>Jun 24</td>
</tr>
<tr>
<td>Searching for payment transactions</td>
<td>Jun 24</td>
<td>Jun 24</td>
</tr>
<tr>
<td>Getting invalid events</td>
<td>Jun 24</td>
<td>Jun 24</td>
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Citi’s Implementation of GPI – Our Experience

1) Ensuring that Citi’s payment processing and SWIFT interfaces are compliant with GPI message formats - this phase involved technical development in core transaction processing systems to develop following key features/ functionalities

- Compliance with GPI MT103 and MT199 format
- GPI Directory and Payment initiation
- Processing Status updates via MT199
- GPI Intermediary role - passing on status received from Bene
- GPI Beneficiary role - update to previous bank

**Time and Effort**

Overall Time 6 months

**Phase**

- Business Analysis 2 months
- Development and Testing 5 months
- Planning 1 month

2) Integrating the GPI features in our client facing tools - development required to enhance client facing tools to show GPI status updates and UETR

- Development of API to connect to and download SWIFT tracker data
- Integration with client facing channels

**Time and Effort**

Overall Time 11 months

**Phase**

- Business Analysis 2 months
- Development and Testing 7 months
- Planning 2 months

3) Integrating SWIFT Cloud based GUI tracker in our processes - Ensuring customer service teams have access to SWIFT Tracker GUI to service our clients in response to queries related to GPI transactions

- Training and Process documentation
- Technical changes to access GUI

**Time and Effort**

Overall Time 4 months

Overall Effort 1 month
Beyond Track and Trace

Wave 1
- Tracking
- Transparency of charging

Wave 2
- Further digitization of customer experience
- Fraud recovery enhancements

Wave 3
- Evolved intra-bank operating model (e.g. pre-check of bene acct number)

A role for DLT?
- Nosto reconciliation POC being progressed by SWIFT
SWIFT’s gpi Adoption Initiatives – Path to Scale

Adoption drives:
- Benefits for banks’ clients, and
- Scale for new features offering efficiencies for banks

2016 SWIFT FMUs
2017 Fedwire Chips
2017 UETR between gpi banks

2017 SR2017 Non-gpi banks: UETR receipt enabled
2018 SR 2018 Non-gpi banks: UETR sending enabled?
2018 RMB JPY CHF
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Correspondent Banking Pricing Implication

Cost Optimization

Value Add Services
GPI Use by a Corporate Client – Hypothetical “Case Study”

**Tracking**
Corp X derives “value add” from the tracker as it develops process efficiencies e.g. reconciliation process, payment confirmations

**Cost Optimization**
Corp X actively analyses fee deductions to optimize the cost of payments

**Implications for the Industry**
- i. Redefined MVP includes GPI tracker
- ii. Service efficiencies
- iii. Routing via GPI banks demanded

- i. Pricing pressures targeted on deductions
- ii. Less tolerance for pricing inconsistencies
- iii. Value add opportunity for originating bank - analytics and advisory
Immediate and Potential Efficiencies

Increased adaption will drive evolution of additional features offering incremental efficiencies.

Wave 1
- Service Reconciliation

Wave 2
- Expedited Fraud Stop and Recovery

Wave 3
- Extended Remittance information
- Up Front STP validation

Ease of Implementation (potential indirect participation models)

Commercial Integration

Corporate Demand

Bank Adoption

System wide Efficiencies

Adoption Drives Functionality Expansion
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Cost Optimization

Value Add Services

Top Line Pressures

Shifting Pricing models
Pricing Implications

**Pre GPI**

- Transparency on demand
- Cross-subsidization

**Post GPI**

- Seamless Transparency
- Pricing for Value

**Pricing for Value**

Pricing models to evolve in sophistication

Core services – transaction pricing for value...

- at sender/bene level
- at client level
- at transaction type level – Treasury versus Commercial
- at market level – e.g. Debits versus Credits

...and incorporate multiple value points:

- Intraday liquidity facilities
- Reporting tools (SWIFT or proprietary)
- Compliance
- Other (e.g. customizations, complex investigations)
GPI – Opportunities

GPI – Competitive Opportunities

<table>
<thead>
<tr>
<th>Client Usage</th>
<th>Tracking</th>
<th>Cost Optimization</th>
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<tbody>
<tr>
<td>MVP</td>
<td>GPI Tracker</td>
<td>Reporting</td>
</tr>
<tr>
<td>Value Add</td>
<td>Reporting</td>
<td>Advisory, Digitization</td>
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Competitive Advantage

- Speed to market
- Product Differentiators

Participation Models

Direct vs. Indirect participation?

GPI – Efficiency & Risk Opportunities

- Process Efficiency – Reduced level of exception management
- Enhanced Risk Management – Enhancements to fraud recovery processes
Sample Disclosure in Citi’s Self-service Tools

Citi’s Payment Flow Manager

Citi will be passing on GPI information to its bank clients via self-service tools.

Citi’s Payment Flow Manager

Upcoming module in Citi’s PFM “gpi Details”
Citi’s FI Insights – Understand Your Flows and Pricing

An analytical tool that synthesizes your payments data into simple, intuitive dashboards providing actionable information.

Visibility into the Global Movement of your Flows

The Payments Destination Map provides visualization of your payment origination and destinations points on a global scale. This interactive dashboard allows you to further drill down into your deductions corridors, helping to create understanding into the geographical movements of your flows.

Review of geographical distribution of your flows

Examine revenue implication of pricing discrepancies by flow type

<table>
<thead>
<tr>
<th>Payment Flows</th>
<th>Breakdown by Message Type</th>
<th>Breakdown by Charge Code</th>
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</thead>
<tbody>
<tr>
<td>Debt 4,865</td>
<td>MT103 72% (3,460)</td>
<td>BEN/SHA 70% (3,418)</td>
</tr>
<tr>
<td>Credit 4,442</td>
<td>MT202 21% (1,042)</td>
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</tbody>
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<table>
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<tr>
<th>Payment Types</th>
<th>Breakdown by Routing</th>
<th>Breakdown by Deductions</th>
</tr>
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<tbody>
<tr>
<td>Commercial 4,502</td>
<td>FED 5% (32)</td>
<td>Deduction Not Taken 40% (1,946)</td>
</tr>
<tr>
<td>Treasury 363</td>
<td>BOOK 77% (3,775)</td>
<td>Deductions Taken 60% (3,919)</td>
</tr>
</tbody>
</table>
To GPI or Not to GPI?
Benefits of GPI

‘Life is inherently risky. There is only one big risk you should avoid at all costs, and that is the risk of doing nothing’ – Denis Waitley

- Sustainability
- Relative ease of integration
- Client Demand
- Efficiencies & Risk

Status Quo

GPI