Modernization of Payments and Collections

Josie Forde
Market Management
Growing Pressures on an Imperfect Payments System

Market Forces…

- Millennials with New Expectations
- Advancing Technology
- 2008 Financial Crisis
- Growing Regulation
- Fraud & Cyber Attacks
- Globalization of Trade Flows

Payments System

Traditional Challenges…

- Risk
- End to End Cost
- Timeliness
- Client Experience
- Transparency
- Managing Payee Information
Challenge—Friction in Payment Flows and Infrastructures

• Cumbersome, outdated infrastructure and technology
• Inefficient processes, in many cases the incremental result of compliance with new regulatory mandates over many years
• Processing costs
• Lack of transparency for payments, timing, and liquidity throughout end to end process
• Customer fees can be high and unpredictable
• Sub-optimal user experience
• Lack of speed, for most payment rails

Traditional Challenges…

- Risk
- End to End Cost
- Timeliness
- Client Experience
- Transparency
- Managing Payee Information
Opening the door to potential disruptors who promise a better client experience.

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Fintechs are also active in Latin America…

<table>
<thead>
<tr>
<th>Chile</th>
<th>Brazil</th>
<th>Mexico</th>
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<tbody>
<tr>
<td>Payments :</td>
<td>150 Fintechs :</td>
<td>Payments and bitcoin</td>
</tr>
<tr>
<td>- CrowdTransfer</td>
<td>- Vindi</td>
<td>• Volabit</td>
</tr>
<tr>
<td>- CurrencyBird</td>
<td>- Foxbit</td>
<td>• PagoFacil</td>
</tr>
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<td>- Khipu</td>
<td>- MoIP</td>
<td>• ComproPago</td>
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<td>- Flow</td>
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<td>- Masblu</td>
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<td>- Puntopagos</td>
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<thead>
<tr>
<th></th>
<th>Enterprise financial management</th>
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<tbody>
<tr>
<td></td>
<td>• Facturama</td>
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<td></td>
<td>• Reachcore</td>
</tr>
<tr>
<td></td>
<td>• Factigo</td>
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Blocktech in Financial Services Virtualscape
Applications & Solutions

Source: http://startupmanagement.org/blog

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## Blockchain Exploration at BNY Mellon

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Participants</th>
<th>Objectives</th>
<th>BNYM Role &amp; Opportunities</th>
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<tbody>
<tr>
<td>BKcoin</td>
<td>Internal</td>
<td>Understand working of Bitcoin and blockchain to create an internal coin.</td>
<td>Use <strong>BKoin</strong> for blockchain awareness and education.</td>
</tr>
<tr>
<td>PTDL Group</td>
<td>London Stock Exchange + Financial Institutions</td>
<td>Explore blockchain for Post Trade activities</td>
<td>BNY Mellon to participate in Business use-case group as well as Technology group.</td>
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<td>R3 CEV</td>
<td>40+ global Financial Institutions</td>
<td>Create common standards and technology platform for blockchain-based solutions for financial services.</td>
<td>BNY Mellon to participate in identifying business use-cases and defining the technology architecture. Opportunity to access common standards, work with other Financial Institutions.</td>
</tr>
<tr>
<td>Ripple</td>
<td>Ripple Labs</td>
<td>Payments &amp; Settlement improvements.</td>
<td>Opportunity to optimize cross-border payments.</td>
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Ripple Proof of Concept (POC)

Test Environment Experimentation with Ripple Connect Software and Ripple Ledger/Network

- Ripple Connect Software – payment communications and quoting process
- Ripple Ledger/Network – transaction settlement, ledger based on Blockchain tech
- Modeling a cross-border low value payment use case

**Potential benefits to confirm via the POC**

- Greater straight through processing via up-front quoting process
- Expedited payment settlement, near real-time
- Lower processing costs
- Improved payment status transparency and real-time liquidity monitoring
- Certainty of end to end fees for clients

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BKoin: Executing Blockchain within BNY Mellon

- Internal application built using Bitcoin core
- Allows exchange of “BKoins” between internal BNY Mellon users
- Tracks user balances and transaction history using private blockchain
- Uses private peer-to-peer network within BNY Mellon infrastructure

NEXEN is BNY Mellon’s new API driven ecosystem and portal for client interfaces with BNY Mellon platforms.
### Blockchain - Potential Benefits

<table>
<thead>
<tr>
<th>End to end cost</th>
<th>Timeliness</th>
<th>Transparency</th>
<th>Managing Payee Banking Information</th>
<th>Settlement, Liquidity, &amp; Systemic Risk</th>
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**Theoretical—To Be Validated---

### Potential Benefits
- Capable of recording movement of digital assets real-time.
- Public/private encryption key technology - difficult to hack without private keys.
- Encodes all transactions into blocks.
- Quick, global confirmation of transactions.
- Decentralized - no one place for cyber attack or failure.
- New product opportunities using a single messaging & settlement infrastructure.

### Outstanding Questions
- Open source – is it secure?
- AML/OFAC compliance?
- How much transactional data can be incorporated into a blockchain?
- Timetable for network effect?
- Difficulty of integration with existing platforms?
- Does long-term benefit justify short-term cost of integration and multiple infrastructures?
SWIFT Global Payments Innovation—Improving the speed and transparency of cross-border payments

• Collaborative effort between SWIFT and 40+ global banks

• Aims to improve client’s correspondent banking experience by increasing speed, transparency and predictability of cross-border payments through:
  – Same day use of funds
  – Transparency and predictability of fees
  – End-to-end payments tracking
  – Transfer of rich payment information

• Initially targeting corporates for B2B payments

• Underlying technology will involve peer-to-peer messaging
  – Blockchain and distributed ledger technology will be explored in the future

• Targeting a pilot by September 2016

• BNY Mellon intends to participate in the pilot for USD payments.
Global Payments Innovation – Ecosystem Vision

Global payments innovation initiative (gpii)

- **Global reach**: provided by banks connected to domestic payments systems
- **Smart collaboration**: (e.g. enhanced compliance practices, optimised intraday liquidity flows)
- **Embrace innovation**: (e.g. peer-to-peer messaging, real time settlement mechanism)

Source: SWIFT
## SWIFT Global Payments Innovation Initiative—Benefits

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- Greater efficiency in managing cross-border payment flows
- Improved ability for banks to provide SLAs and status updates for designated cross border payments
- Greater predictability of, and visibility into, payment delivery
- Increased speed
- Greater fee transparency
Payments on Behalf of (POBO) structure has been evolving...

- POBO : evolution towards greater centralization of cash management

POBO Process

- Business unit receives invoice, approves it and sends to Payment Factory
- Payment factory sends payment instruction to bank on behalf of business unit and sends a debit entry to the company’s in-house bank
- Bank executes the payment
- Company’s in-house bank debits the business unit’s internal account
### Benefits and Challenges of POBO

<table>
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<th>Benefits</th>
<th>Challenges</th>
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<tbody>
<tr>
<td>• More efficient working capital management</td>
<td>• Local, complex tax implications</td>
</tr>
<tr>
<td>• Reduced costs: account maintenance, transaction fees</td>
<td>• Differing regulations on non-resident accounts and non-residents paying for local entities</td>
</tr>
<tr>
<td>• Decreased cross border and FX payments, with better spreads</td>
<td>• Many countries require Central Bank approval</td>
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<td>• Greater control and fraud prevention</td>
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<tr>
<td>• Better, consolidated view of supplier relationships</td>
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BNY Mellon is modernizing our approach to payments to help clients overcome challenges

Expanding suite of solutions
Collaborating within the industry
Teaming with disruptors
NEXEN: New open source cloud-based platform

Providing a foundation for clients and the industry to build upon

NEXEN is driven by five core components that are transforming how our services are developed and delivered. NEXEN creates a flexible environment where we can be responsive to clients’ needs.

<table>
<thead>
<tr>
<th>Platform</th>
<th>BXP is a cloud-based platform that lowers our costs and delivers resilient, secure solutions that scale and accelerate time to market.</th>
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<tbody>
<tr>
<td>Digital Pulse</td>
<td>Reports, predictive analytics and insights generated from the multitude of transactions at BNY Mellon.</td>
</tr>
<tr>
<td>APIs</td>
<td>Application Program Interfaces (APIs) allow integration between BNY Mellon services and our clients’ solutions.</td>
</tr>
<tr>
<td>Gateway</td>
<td>Integrated business solutions, capabilities and data delivered across all access devices.</td>
</tr>
<tr>
<td>App Store</td>
<td>A virtual store offers enhanced customization and choice with best in-class apps from a wide range of providers.</td>
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