

LEVEL ONE PROJECT BOOT CAMP

NOVEMBER 2017



The Level One Project is an initiative of the Bill & Melinda Gates Foundation



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Introduction



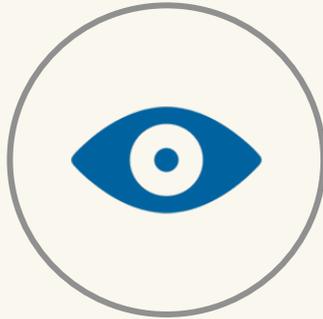
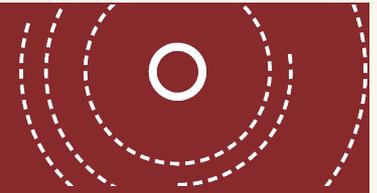
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The Financial Services for the Poor (FSP) team is guided by one overarching goal:

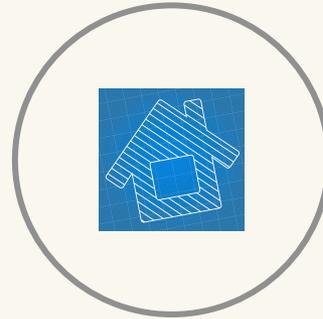
To help people in the world's poorest regions improve their lives and build sustainable futures by connecting them with digitally-based financial tools and services.



What is Level One?



A **vision for a new digital payments platform** that supports inclusive, interoperable digital economies, and the **design principles** to achieve this

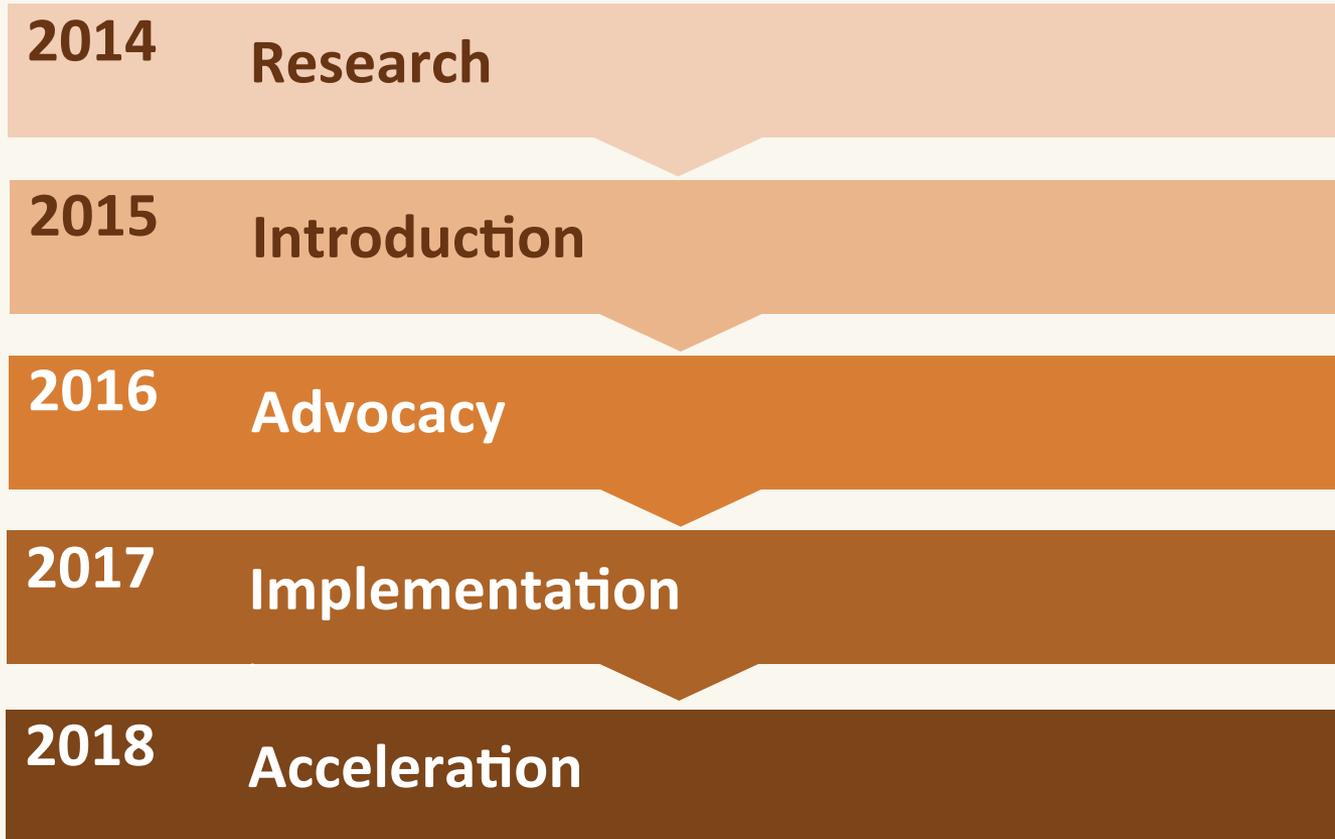


A **blueprint** for how such a platform could be configured within a country



A **set of tools and resources** to enable the implementation of a Level One platform

The Level One Project Evolution



A Focus On the Poor: User Requirements

Secure

Money and data is safely held

Affordable

Cost is acceptable in comparison to available alternatives

Convenient

Easy to access and use

Open

Anyone can enroll and transact with anyone else

Robust

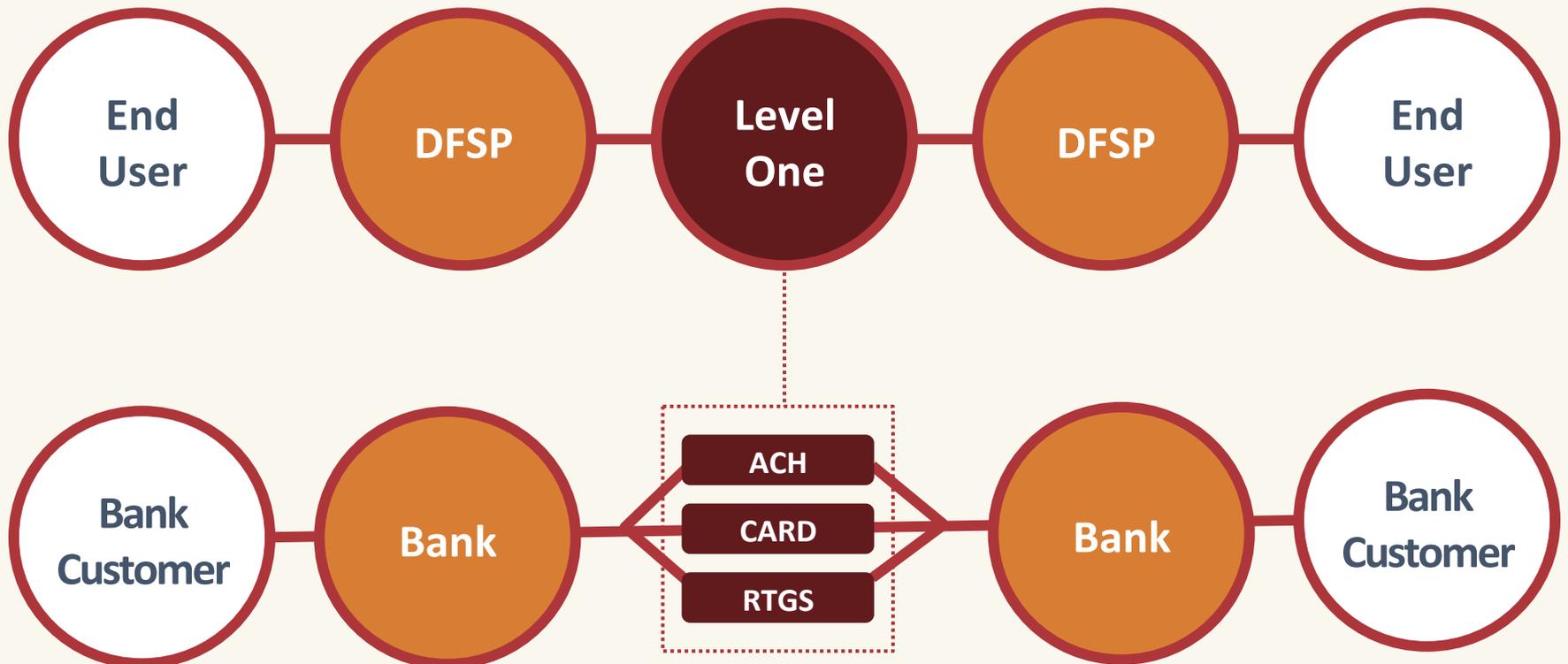
There when you need it

Core user requirements are the same across all segments

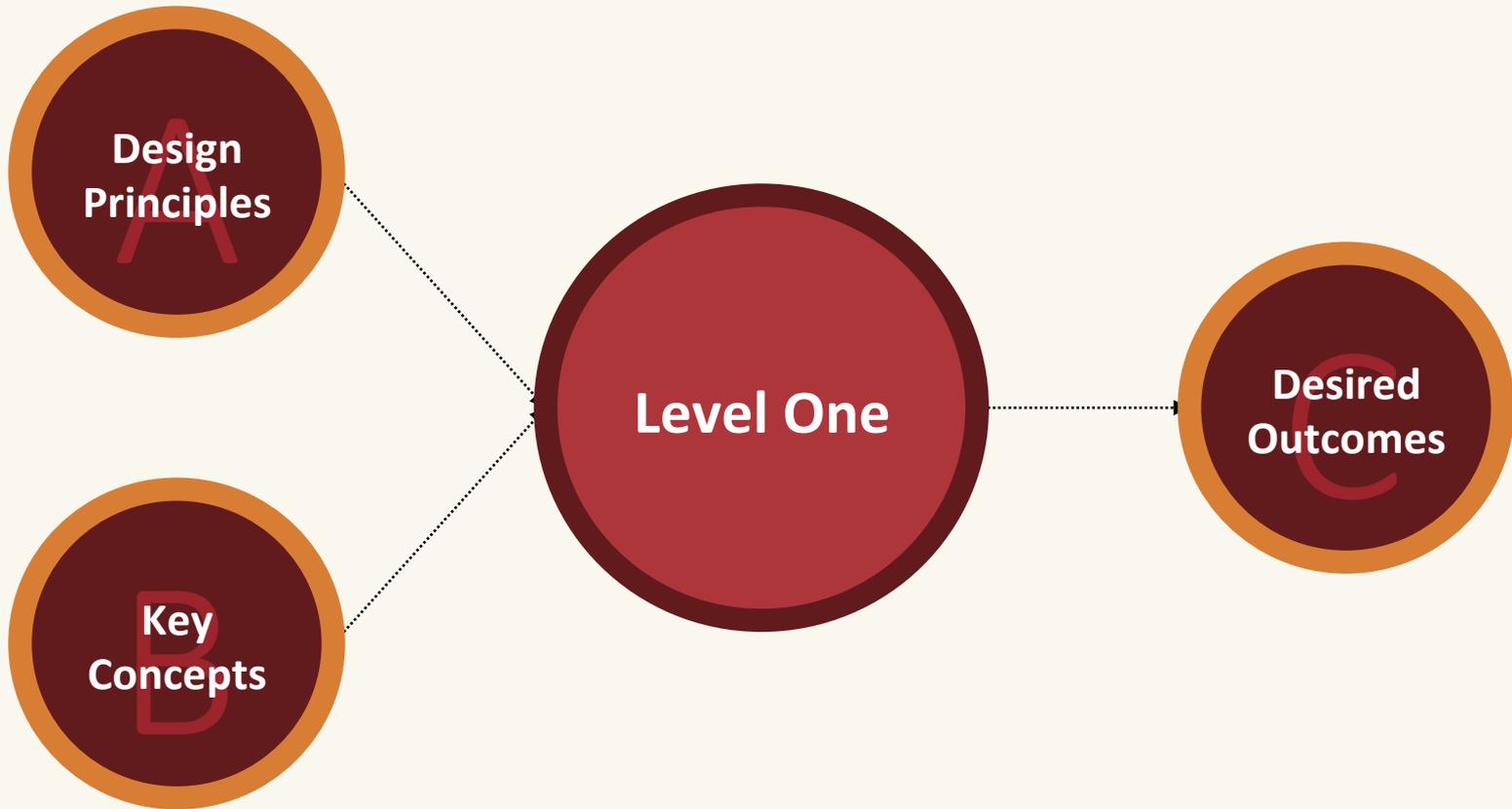
Additional user requirements are specific to use cases

Level One: a New Digital Platform

Exists along with other payments systems in the country



Fundamentals



Design Principles



An *open-loop system*, available to any licensed DFSP in the country. This includes banks and licensed non-banks.

Payments that are *real-time* and “*push*” only. This removes many of the risks and costs inherent in batch processed and “*pull*” payments systems. Payments that are *irrevocable*.



A system that is *governed* by the DFSPs that use it and regulated by a government financial authority. A system that allows *same-day settlement* among participants.

A system that operates on a “*not-for-loss*” basis. This does not preclude DFSPs—or other service providers in the ecosystem—from earning profits through use of the platform.



A *shared investment in fraud detection* and management services. The compliance burden remains with the DFSP, but they share in a less costly, more efficient fraud service.

Open Loop and Interoperability

“The ability to pay anyone and be paid by anyone is a necessary condition for a useful payments platform. In a Level One System, the ability to reach counterparties is not the basis of competition among service providers. The Level One platform provides the ability to reach any counterparty; service providers should and will compete on other dimensions of their service.”

Level One is a vision for scheme interoperability: all participating DFSPs use the system to exchange transactions with each other

“Open Loop” means that any licensed provider of transaction accounts can join the system

Key Concepts: A Competitive Ecosystem

Multiple Payments Services Providers

Digital Financial Services Providers

Hold transaction accounts



Other Financial Services Providers

Direct connects; DFSP sponsor



Key Concepts: A Competitive Ecosystem

Multiple Business Models

- Traditional models relying on fees and balances
- Adjacency models relying on the cross- sale of other services: financial or non-financial
- Marketplace models

A Collaborative - Competitive Spectrum

Rules

Rails

Accounts

Apps

Key Concepts: A Competitive Ecosystem

The Low Cost Imperative

- All DFSPs share a common need: a low-cost value-transfer platform
- The Level One Platform itself is a low-cost service to the DFSPs, operated on a “not-for-loss” basis
- Achieving a low-cost platform requires volume: multiple DFSPs, lots of consumers, multiple use cases
- Most (but not all) DFSPs will have for-profit businesses that use the platform
 - The platform transaction cost—which is borne by the DFSPs—is not the same as the end-user pricing. End-user pricing will be determined by DFSPs (and at times constrained by regulation). A low-cost platform is critical to enable low (or zero) end-user pricing

Key Concepts: Government Support

Regulatory Support

- Tiered and automated KYC
- New classes of DFSPs; all have access to the platform
- The Level One Scheme is a separate legal entity, governed by its participating DFSPs
- Agents can cash-in and cash-out for all DFSPs
- Fair telecommunications network access (e.g., USSD) and pricing
- The use of established international standards
- Measures to foster an open DFS architecture and facilitate competition

Key Concepts: Government Support

- Government use of the platform
 - To pay benefits and salaries
 - To collect taxes, fees and other payments
 - To pay suppliers
- Supportive business formalization and tax policies
- Consumer and merchant education programs

Desired Outcomes

The Level One System is one critical element

- Financial Access
- Digital Liquidity
- Financial Enablement
- A Digital Ecosystem

Payments Basics and Level One



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Level One and Traditional Payments Systems

Traditional Payments Systems

- In Developed and Emerging Markets
- Check, Card, ACH, Wire Transfers
- Paper and Electronic

A Level One system co-exists with traditional systems

The same idea, but

- Faster
- Cheaper
- Less risk
- Modern technology
- More inclusive: more people, more financial services providers

A Level One
Payments System

Payments Basics: Open-Loop Systems

Used around the world in most common payments systems

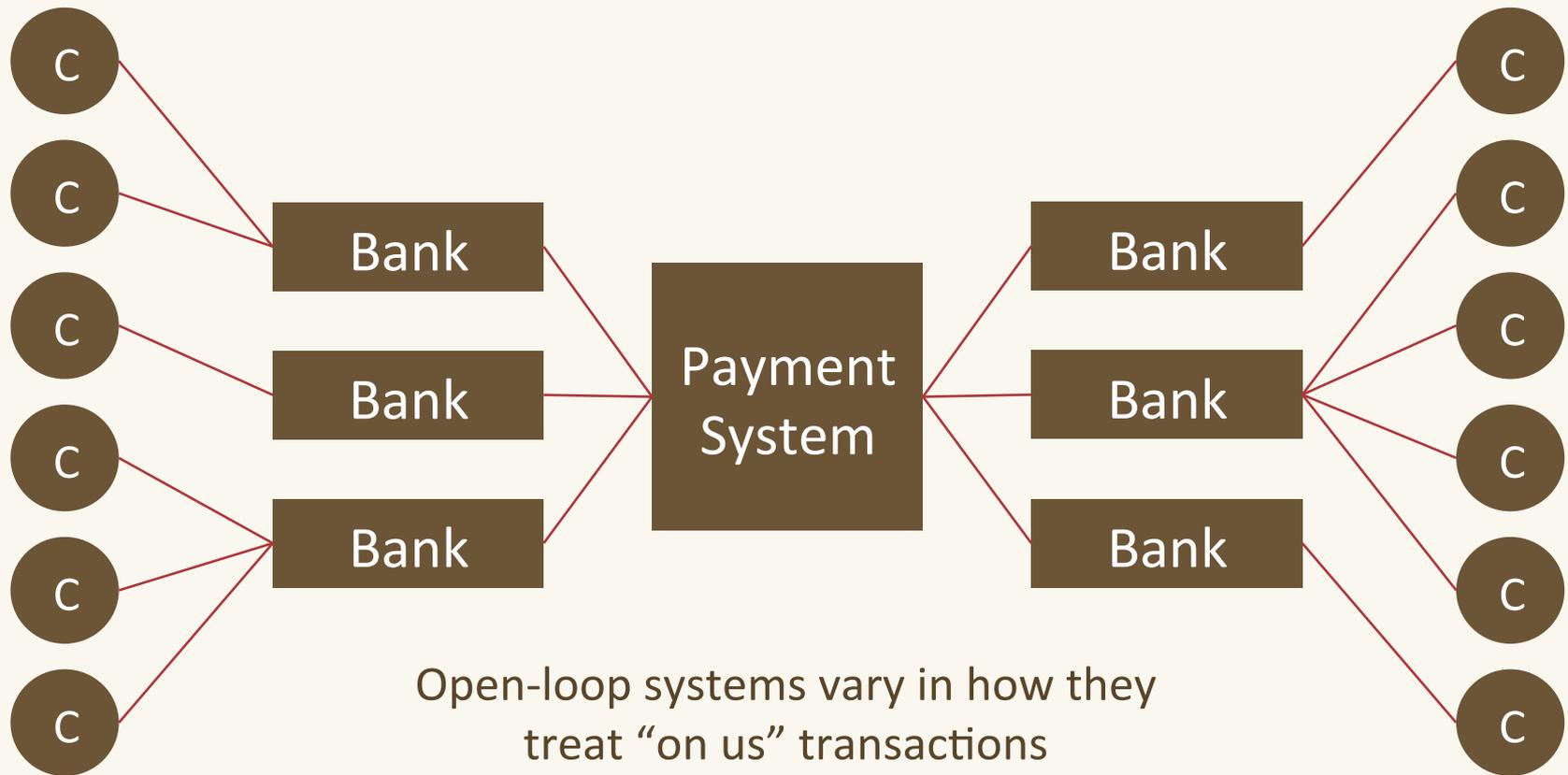
- Customers access the payment network through a relationship with a bank



- Banks belong to the payment system and are bound by its rules
- Value transfer is accomplished by accessing the payment system

Payments Basics: Open-Loop Systems

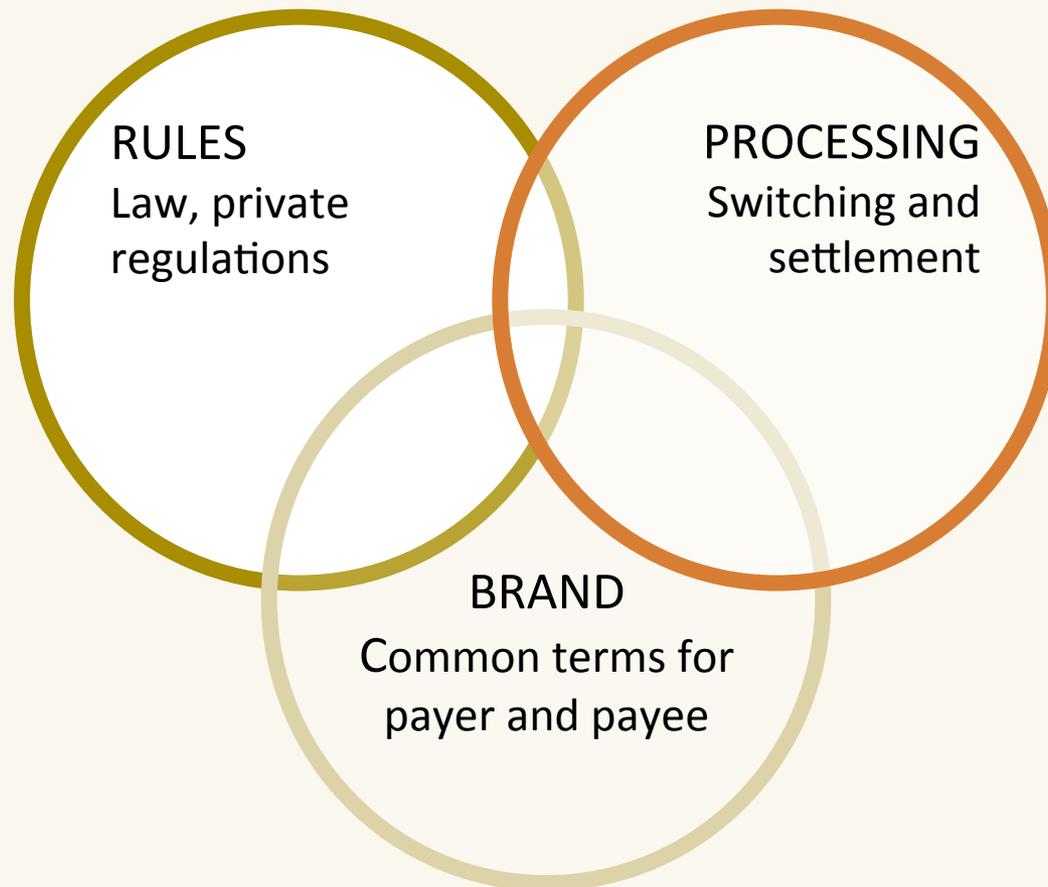
Scale rapidly to serve multiple customers



Open-loop systems vary in how they treat “on us” transactions

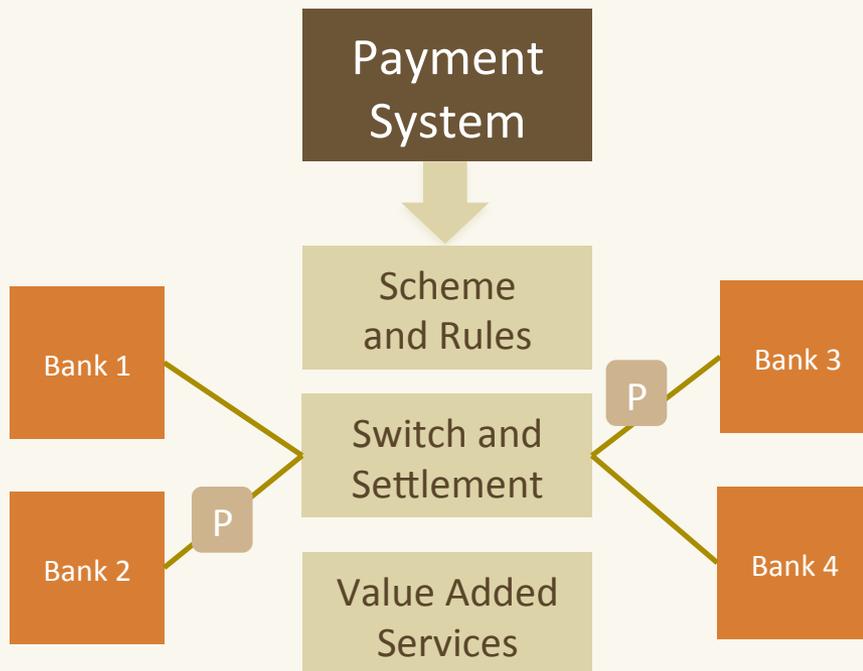
Payments Basics: System Functions

What does a payments system need to do?



Payments Basics: Schemes and Switches

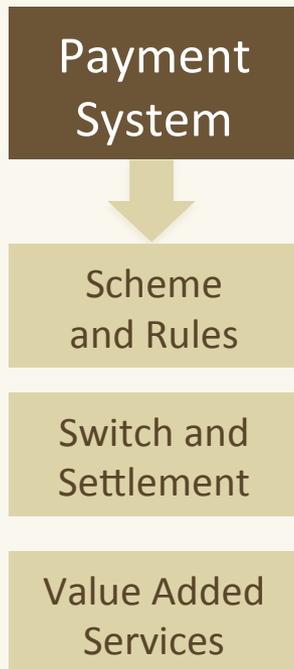
Schemes write rules and most typically run or hire a “switch”



- Banks join the scheme and are bound by its rules
- Banks use the switch and follow its operational guidelines
- Banks may use processors or aggregators to access the switch
- Some switches are physically distributed

Payments System Basics: Network Models

“Thick” and “thin” models: how much resource in the center?

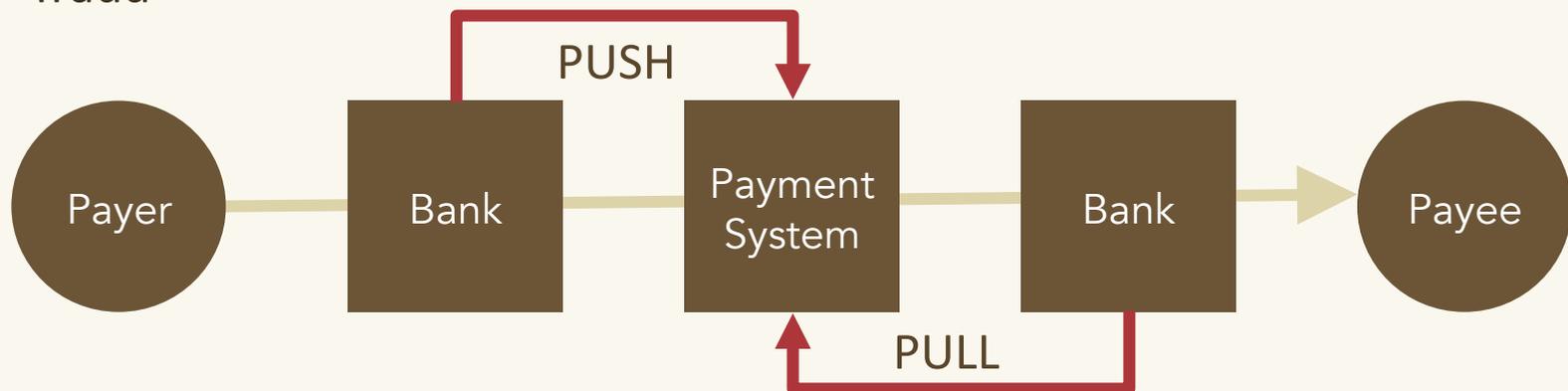


- “Thick” model networks have lots of resource in the center: can afford complex rules and value-added functions. These are generally supported by strong revenue-generating business models for participating banks
- “Thin” model networks provide minimal functionality at the center. These typically support cost-reduction efforts for participating banks

Payments Basics: “Push” and “Pull”

Any payment on a bank transfer system is a “push” or “pull”

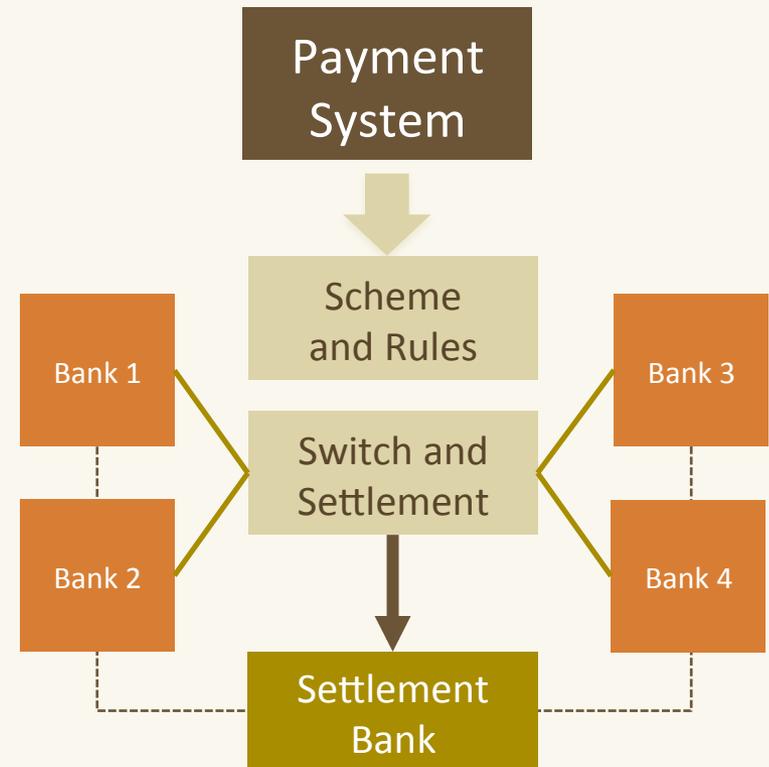
- “Pull payments” - the payee’s bank initiates the transaction. Checks, direct debits, and cards are all “pulls”. Pull payments are more prone to fraud



- “Push” payments – the payer’s bank initiates the transaction and authenticates their customer. Wires, and credit transfers are “push”. Push payments are less prone to fraud

Payments Basics: Settlement

- All retail schemes use some form of net settlement; most typically multilateral net settlement
- The switch typically calculates the net settlement positions
- These positions are then communicated to a common settlement bank – often the Central Bank
- Every bank has an account at the settlement bank



Payments Basics: Scheme Governance

An industry association governance body is common

- The scheme is an industry association
- Participating banks sit on board and vote on rules
- Participation drives sense of “fairness” which is essential for collaboration
- Voting rights are balanced between needs of large and small players
- Regulators often have a non-voting seat in the association

Payments Basics: Scheme Operating Rules

Rule books tend to expand over time

- All rule sets cover the basics
 - Who can belong to the scheme
 - What standards are used for processing; how settlement is done
 - How liability is allocated
- Some schemes have broader rule sets
 - Scheme brand guidelines
 - Inter-participant fees (“interchange”)
 - Use-case-specific liability allocation

Level One: Open Loop

- The same concept, but expanded to include more
- **End users** are people, businesses, and governments. Level One includes more people and more enterprises



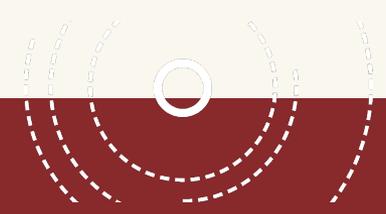
- **DFSPs** are banks and other licensed providers of transaction accounts. Level One includes more providers

Lessons Learned: Interoperability

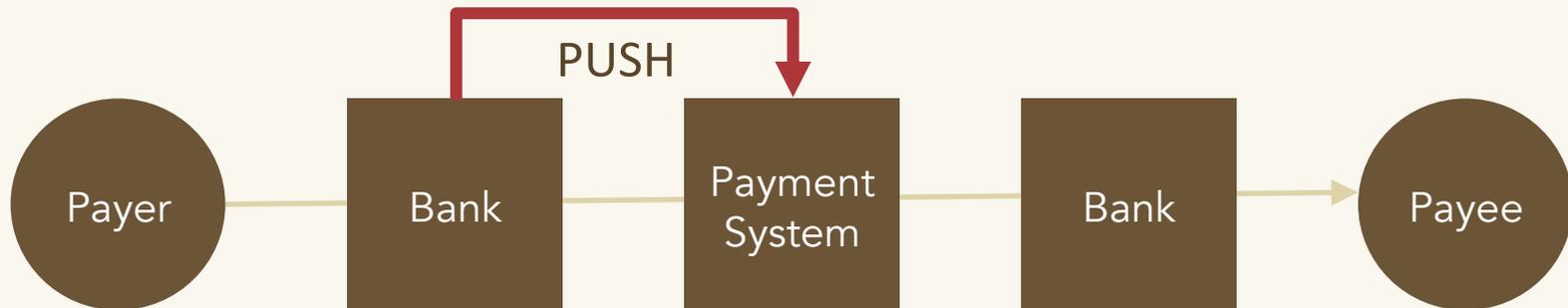
From research done during development of Level One

- A closed-loop system limits reach
- Payments system “interoperability” is usually achieved within a scheme: scheme participants exchange transactions; banks belong to many different schemes
- Licensed non-banks can provide financial services within a variety of regulatory structures; tiered KYC can enable financial inclusion. Different types of financial institutions can participate in the same interoperable payments system

Level One: Payments are “Push”



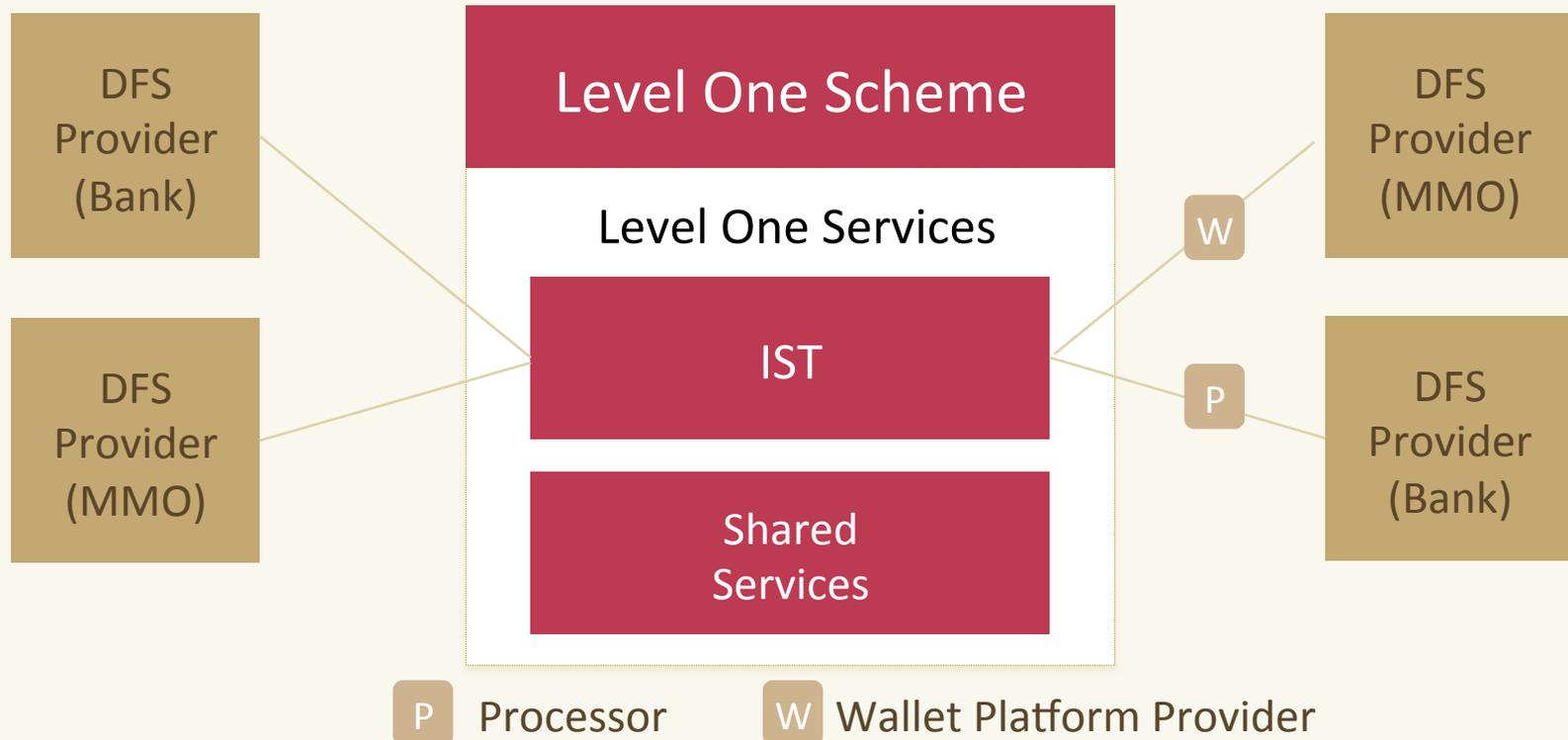
- DFS Provider 1 sends the transaction to the hub, after authenticating their customer and validating available funds



- A Level One “push” payment is also *real time*
- A Level One “push” payment may happen after a “request to pay” message

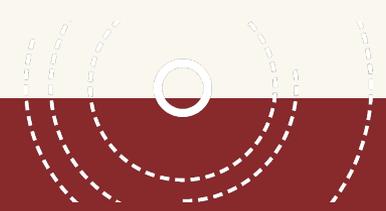
Level One Basics: Scheme and Switch

- DFS Providers may access the switch through a processor or wallet provider



- Other entities, such as aggregators or marketplace providers, access Level One services through a relationship with a DFSP

Level One Net Settlement



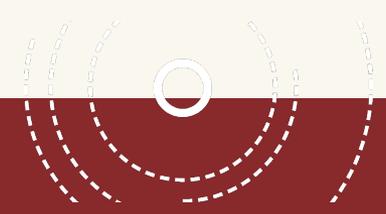
- Same structure, but more frequent settlement periods
- Banks and licensed non-banks belong directly to same settlement scheme and each has an account (if possible) at a common settlement bank
- Settlement is done at a minimum on a same-day basis; ideally more often
- Systemic controls liquidity risk through prefunding or other techniques

Lessons Learned: Settlement

From Level One Research

- Best practices in net settlement for real time credit-push retail systems are emerging:
 - Dynamic calculation of multilateral net position
 - Use of Net Debit Cap
 - Net Debit Cap enforced by Switch
 - Fully collateralized Net Debit Cap
 - DFSP self-management of collateral and Net Debit Cap
 - System transaction limits (Scheme level or individual DFSP level)

Level One: Governance



- Uses the traditional governance model, but expanded to include all
- Direct participation allowed by any DFSP (bank or licensed non-bank)
- Scheme writes operating rules
- Scheme selects hub provider (IST)

Level One: Operating Rules

- The Level One scheme writes operating rules acceptable to its owners/participants
- These rules, in conjunction with law and service provider operating guidelines, govern transaction processing and the liabilities and obligations of the providers



Lessons Learned: Governance

From Level One Research

- Direct participation in governance creates a feeling of fairness among participants
- There is no “silver bullet” in terms of voting rights and size of players: most systems adjust voting formulas as they grow
- Balancing participants desire for a “level playing field” vs. the ability to create competitive advantage is hard
- Many legacy systems use tiered access models, with smaller financial institutions accessing systems through larger institutions, who monetize this service; this model may not be necessary in newer systems

Payments Basics: Payments and Risk



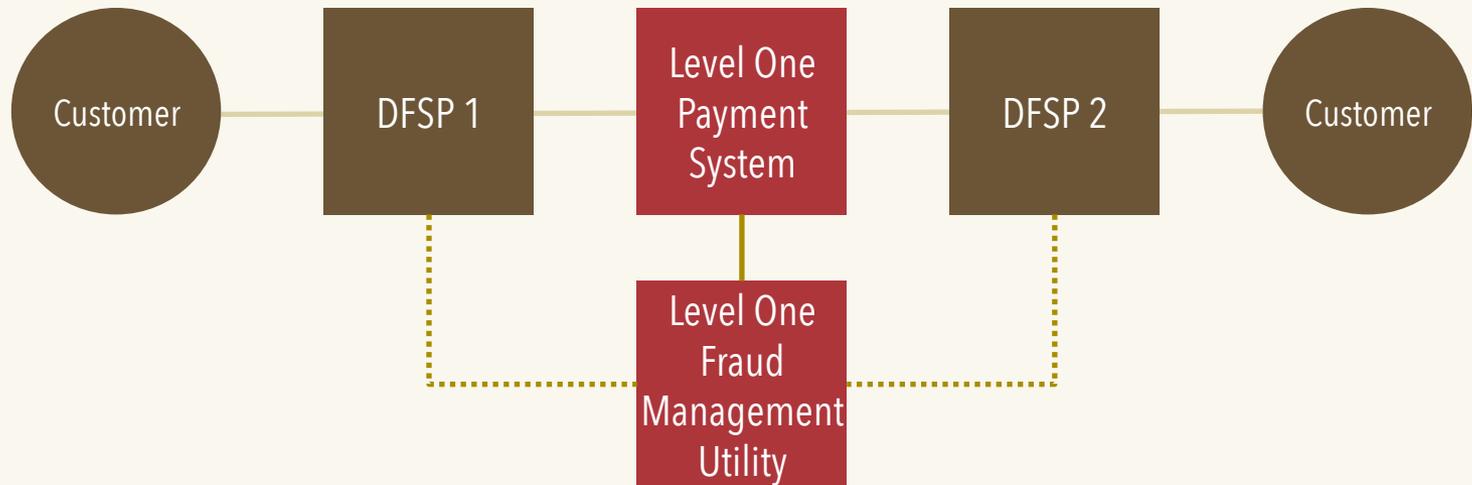
Payments Basics: Risk Management

Who bears the risk depends on law, payment system, and market practice

- KYC (“Know Your Customer”) and AML/CFT (“Anti-Money Laundering and Combating the Financing of Terrorism”) compliance obligations belong to the bank serving the customer
- Fraud liability also usually belongs to the bank serving the customer, unless the operating rules of the payment system (or law of the country) allow one bank to transfer liability to another bank (“charge back”) in certain situations

Level One: Risk Management

- Level One proposes a shared utility to detect and manage certain types of fraud
- Doing this with more data can enhance effectiveness and lower cost



- The Fraud Management Utility would do this on behalf of the participating DFSPs, who would retain the compliance obligation

Lessons Learned: Fraud Management

From Level One Research

- There are best practices for fraud control
 - Shared (pooled) data makes fraud detection easier
 - Bad actor data but also good actor
 - Can be done by (or with) a switch which has access to all transactions (“on-us” and “off-us”); or by reporting data
 - A pooled approach to the investment in detection algorithms also makes good business sense

Lessons Learned: Risk Management

From Level One Research

In some developed markets, payments systems (particularly card systems) have assumed risk management for commerce risk as well as payments risk. This can be effective but is very expensive

Payments Risk

- Payer has insufficient funds or borrows and doesn't repay
- Someone's account is fraudulently debited
- Money is sent to the wrong receiver
- Payer's payment credentials are stolen or counterfeited or a stolen or fictitious account is created

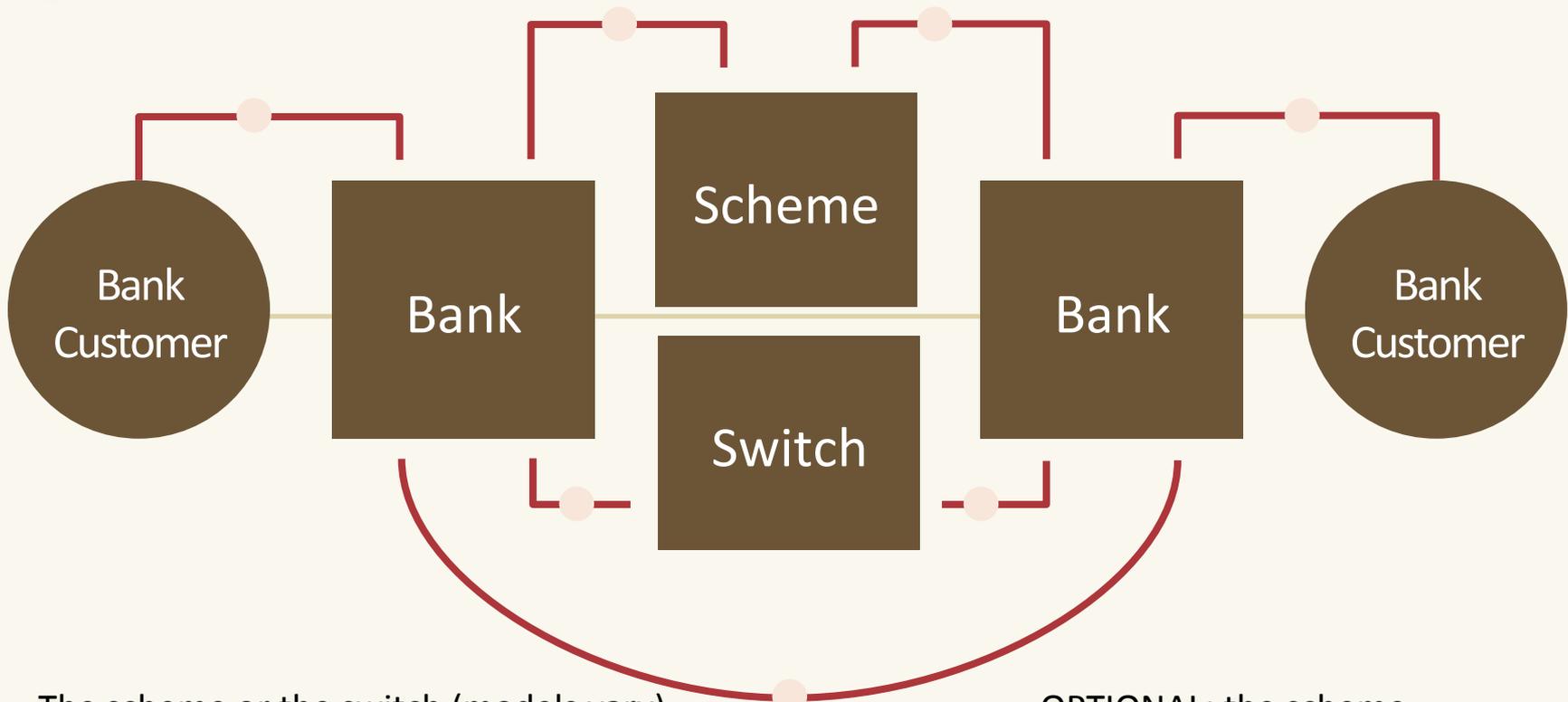
Commerce Risk

- Merchant is fraudulent or doesn't exist; goods or services are not as described, are not delivered or don't work

Payments Basics: Economics

1 End user revenue relationship is determined by a contract between parties

2 The scheme determines fees for bank participation in the scheme



3 The scheme or the switch (models vary) determine what banks pay for the switch and other services

4 OPTIONAL: the scheme determines interchange, if any, among participants

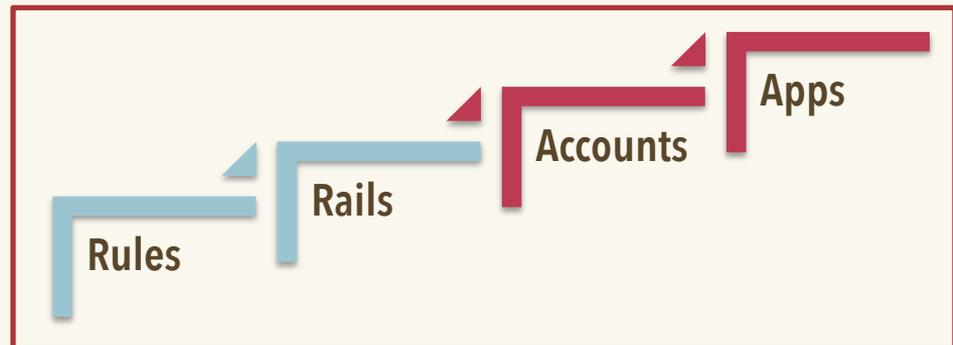
Level One: Economic Model

Level One
Scheme

Level One
Services

- The goal is zero-to-low prices to consumers and poor merchants
- The scheme itself operates on a cost-recovery at scale (not for profit) model for the “rules” and the “rails”
- Fees are on a fixed, not “percent of value” basis
- The scheme runs or hires the scheme services, and is responsible for keeping costs low. The service provider can be a for-profit entity
- Interchange is treated carefully, if used at all

A collaborative-
competitive model



Lessons Learned: System Economics

From Level One Research

- Systems providing very similar functionality operate at very different price and cost levels
 - Some are extremely low cost, some are high
 - Typically “ad valorem” pricing is used only when one party is taking financial risk on the transaction
- “Cost recovery” economic models at the scheme/switch level result in the lowest transaction costs

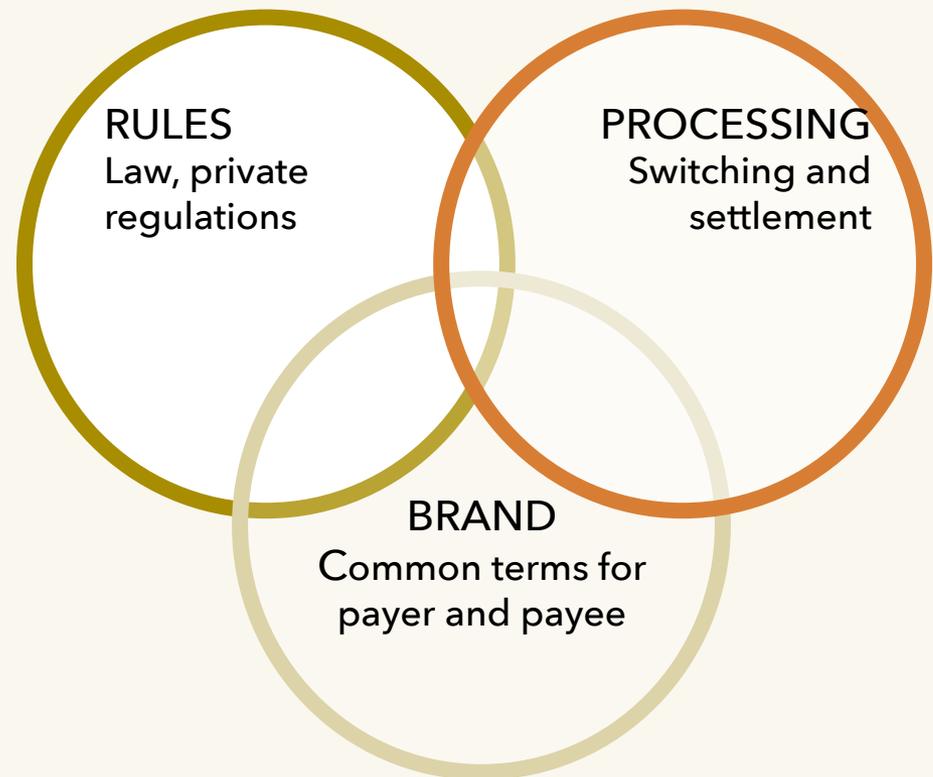
Lessons Learned: Pricing

From Level One Research

- Consumers are reluctant to pay for payment unless the cost of using cash is too high
- Merchants will “pay to pay”, but only if it drives increased sales; small merchants often won’t accept electronic payments if they carry a fee
- Interchange policies need to be treated carefully
- “Percent of value” pricing only makes sense if the party receiving the revenue is taking transaction risk
- Transaction revocability drives up costs

Payments Basics: Scheme Brand

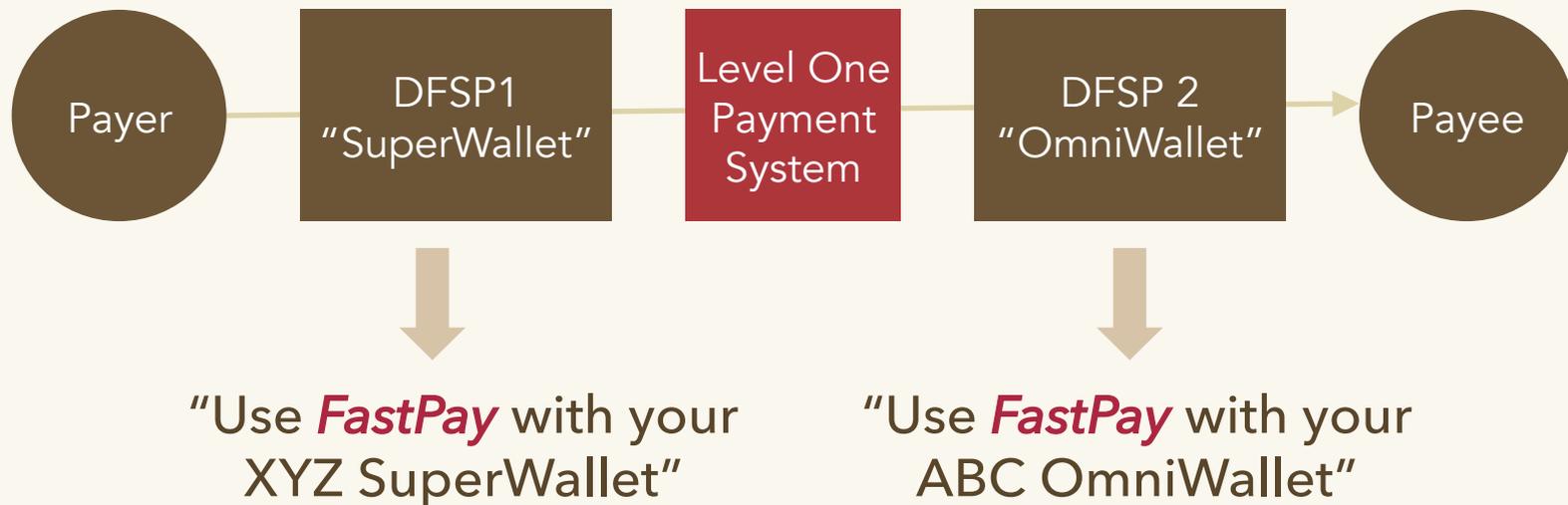
- Some systems have scheme brands; some don't
- All systems need a common vocabulary for end-users



Level One: Scheme Brand

- Goal: establish a system-wide common term for end users

Example: the L1P scheme establishes *FastPay* as a scheme brand

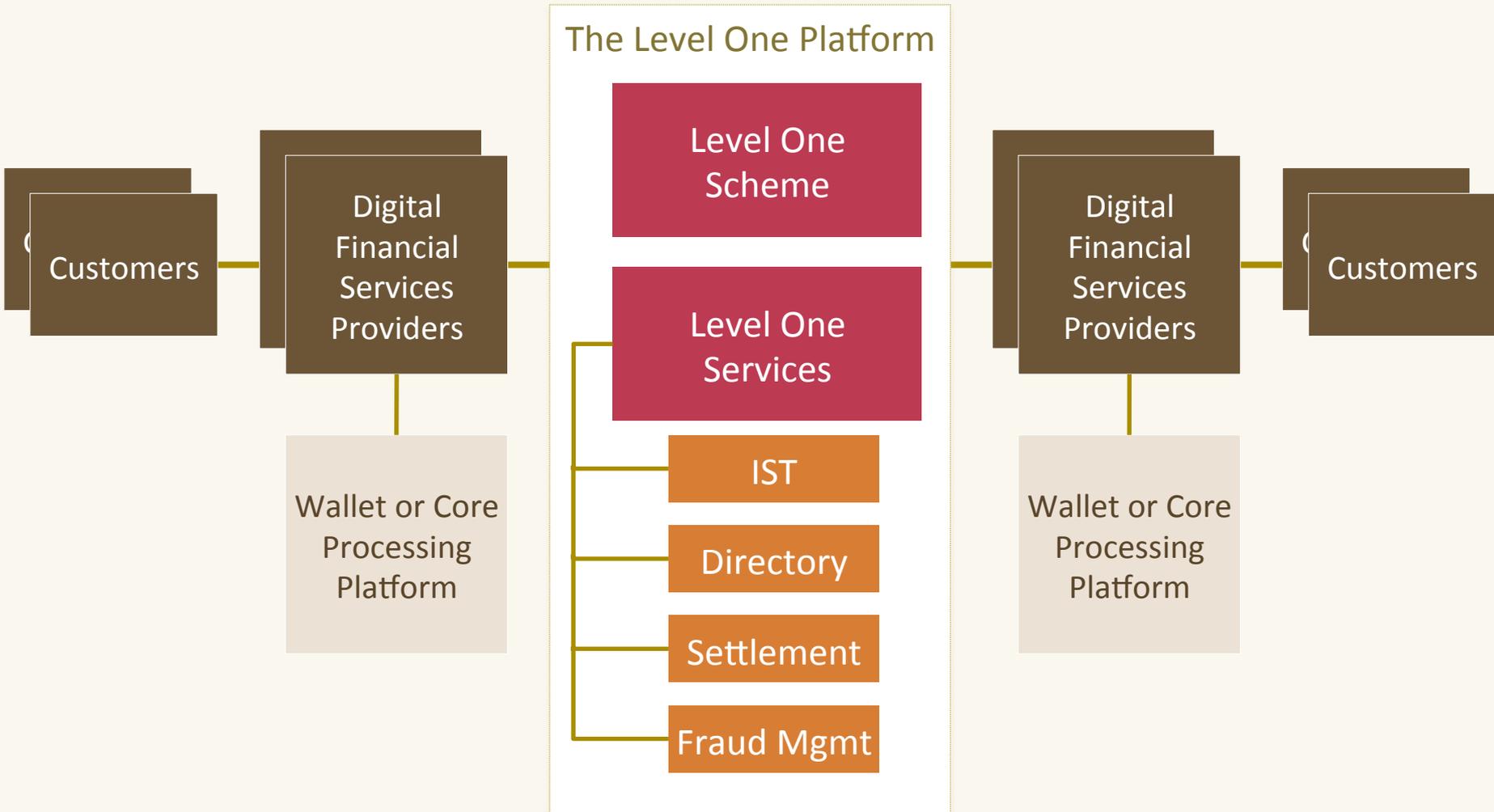
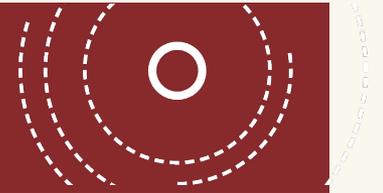


Level One Core Components



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Level One: Core Components



Level One: Core Components – The Scheme

- Governing entity that manages the system on behalf of DFS Providers who join the system – the “Participants”
- Responsible for writing the system rules which bind participating DFS providers
- Responsible for providing the component services through selection of a Level One operator who provides Level One Services. The Level One operator may select different service providers to provide different parts of the services

Level One Core Components: Services

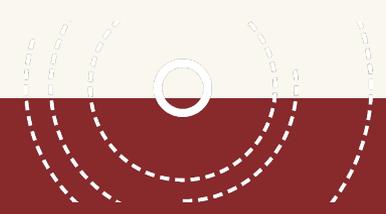
- The Level One Scheme determines its requirements and selects an Operator, who provides core Level One Services, either directly or by selecting vendor(s)
- The Operator and the service providers may be commercial entities
- The Scheme negotiates the fees that DFS participants pay for Services



mojaloop

Mojaloop is the Bill & Melinda Gates Foundation's open source reference model for these services. More information at mojaloop.io

Core Level One Components: IST

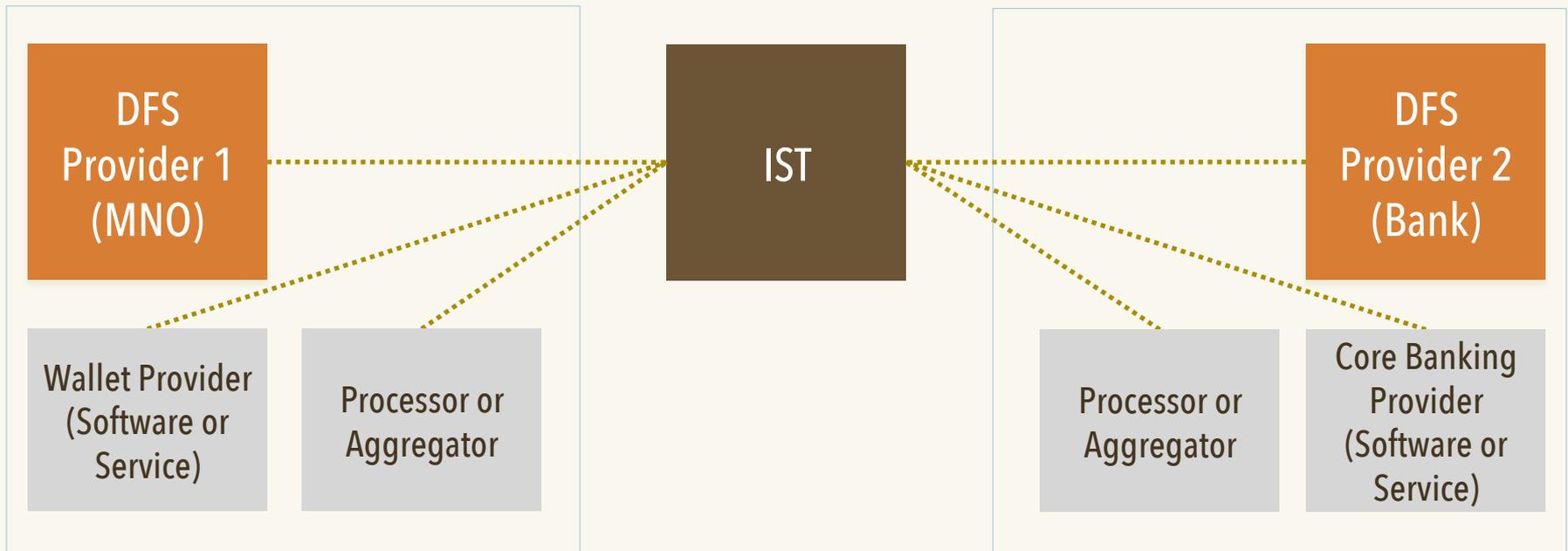


- The IST (Interoperability Switch for Transfers) is a switch operated by the Level One Hub Operator
- Participating DFS providers connect to the IST
- The IST switches transactions to the other DFS provider
- This same “value transfer” can support any use case



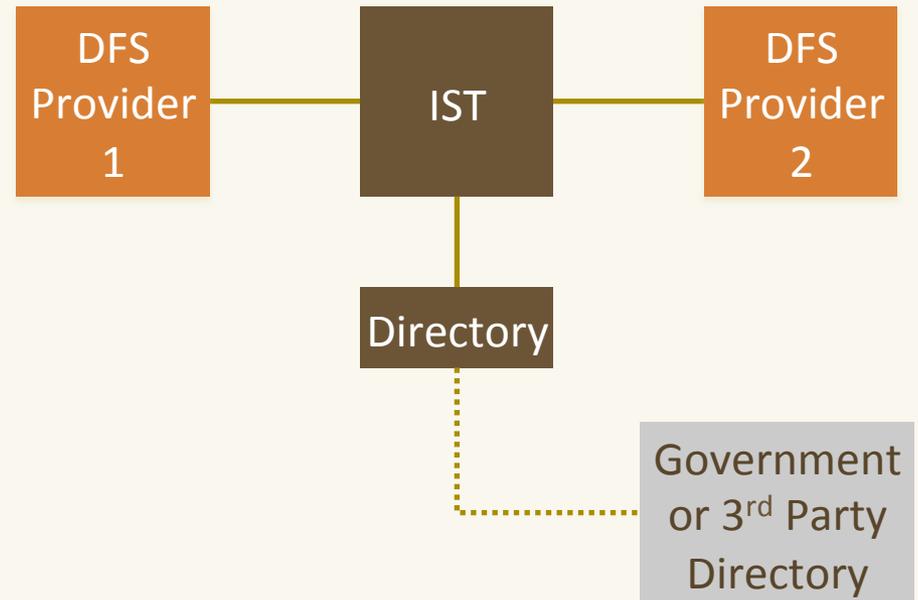
Core Level One Components: IST

- DFS providers can connect directly, or through their relationships with providers who supply them with software or services
- The DFS Provider remains obligated under the Scheme Operating Rules, even if another entity is supplying the physical connection



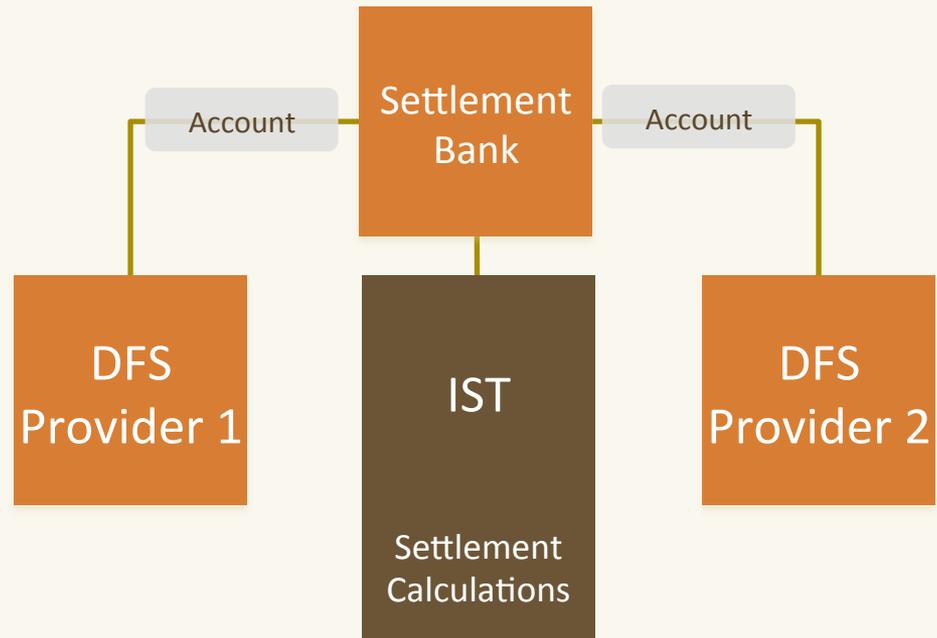
Core Level One Components: Directory

- The IST needs to operate a directory to map phone numbers, or other aliases, to DFS provider accounts
- The directory may also map accounts to national ID numbers or other non-scheme specific numbering; it may access a government or 3rd party directory to do this
- Some provision needs to be made to allow individuals to set a “default” account



Core Level One Components: Settlement

- The IST performs the settlement calculation function (the settlement ledger)
- This information is passed to the Settlement Bank (normally the Central Bank)
- All DFS providers, including non-banks, have an account at the Settlement Bank



Core Level One Components: Fraud Management

- A shared fraud management system is a core principle of Level One
- DFSPs maintain the compliance responsibility to their regulators
- FRMS is provided by the Operator. It relies on use of transaction data switched through the IST, as well as data reported by DFS providers
- The pooled data is used to create both real-time and ex-post-facto analysis of data for detection of fraud
- Services can be used at both the account opening and transactional levels
- The FRMS will help participants manage KYC and Financial Action Task Force (FATF) compliance
- A shared approach benefits from more data and a pooled investment in detection algorithms and scoring

Other Level One Components



There are other services which may connect to the Level One platform. Most of these will be separate services, although some may become shared services of the DFSP participants

- Wallet Platforms and Bank Core Processing Systems: DFS Providers use these systems to account for consumer funds
- Agent Management Systems
- Merchant Services Provider Systems
- Bill Pay, Bulk Payment Facilitation, and other Aggregation Platforms

Level One Systems: Key Choices

Core Platform

- Forming the Scheme
- Achieving Interoperability
- Interconnected Systems
- Payments Addressing
- Inter-DFSP Settlement

Scaling the System

- Enabling Multiple Use Cases
- Merchant Acceptance
- Implementing Shared Services
- Regional Payments Systems
- Cross-Border Payments

Level One Systems: Key Challenges

- DFSP Business Model
- Agent Liquidity Management
- Telecommunications Network Availability and Quality
- Transaction Irrevocability

Scaling the System: Use Cases for a Level One System

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Lessons Learned: Use Cases

From Level One Research

- The same core payments platform can be used for multiple use cases, thus providing system volume

Person to Person (P2P)	Point of Sale (C2B)	Remote Commerce (C2B)
Bill Payment (C2B, C2G)	Business to Business (B2B, B2G)	Income (G2P, B2P)

- The needs of people and businesses span multiple use cases

Lessons Learned: Use Cases

From Level One Research

- Additional *enabling programs* are often needed to implement additional use cases
- Enabling programs may consist of technology (for example, POS terminals) or supporting systems (for example, a bulk payment registration system). There are also often use-case rules and pricing
- Some of these elements are logically provided by the payment system itself; others may be provided by independent third parties

Level One: Foundational Use Case

Use of a Level One system requires end users to have a *transaction account*

Requirements

- An issuer's platform – to support creation of an account and interface with the Level One platform
- An ability to open accounts quickly and easily – with minimal documentation
- A user-friendly user interface

Create and
activate an
account

Safely keep
balances in
the account



Level One: Foundational Use Case

Deposit Cash (“Cash-In”)

Unique Requirements

- An agent network
- Agent interoperability
- Cash management: agent deposit support
- Agent training and supervision



Level One: Foundational Use Case

Withdraw Cash (“Cash Out”)



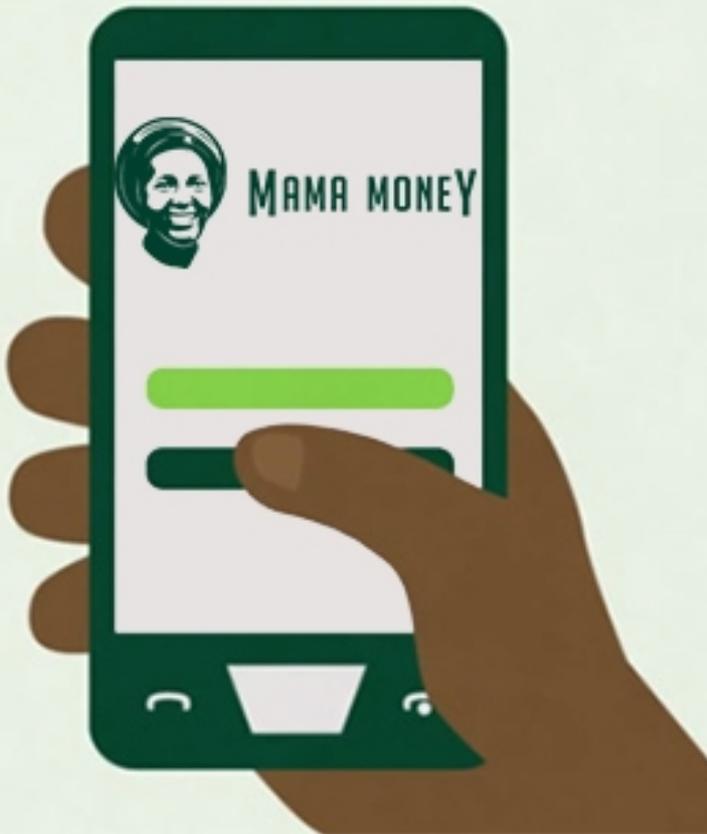
Unique Requirements

Same agent issues as CICO, plus

- Agent liquidity
- Customer authentication support

Level One Use Case: P2P

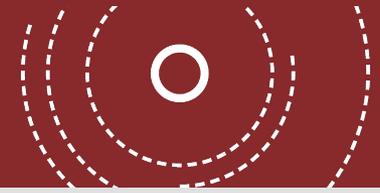
Send and receive payments (*transfers*) from other people



Unique Requirements

- Validation message; possible privacy concerns
- Directory: who maps a phone number (or other alias) to a mobile account?

Level One Use Case: P2P



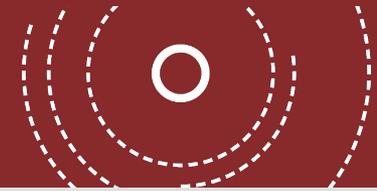
Send and receive cross-border payments (*transfers*)



Unique Requirements

- Connection to foreign payment system(s)
- Currency conversion
- Enhanced regulatory compliance
- Different rules and/or formats in each system

Level One Use Case: B2P, G2P

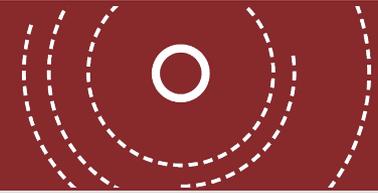


Receive payments *from governments and businesses*



- Integration with government or enterprise systems; may include need for registration support
- Identification and payments addressing
- Cash-Out support
- Conveyance of data to recipient

Level One Use Case: C2B



Make payments to *merchants* – at a store or online



Unique Requirements

- Merchant terminal requirements (if any)
- Merchant “request to pay” messaging
- Merchant registration and sign-up
- Rules re: liability, returned items, fraud

Merchant Payments: A Level One Perspective

- 1 Consumer reads a “Pay to” number displayed on merchant’s till



Consumer instructs DFSP to initiate a push payment to the merchant’s till number or code
- 2 Consumer’s smartphone scans a merchant’s displayed static QR code



Consumer instructs their DFSP to initiate a push payment to to the scanned code
- 3 Consumer’s smartphone scans a dynamic QR code generated on merchant’s phone or tablet



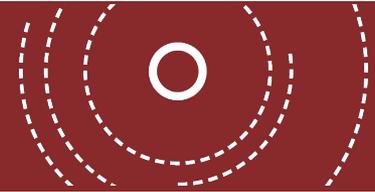
Consumer instructs their DFSP to initiate a push payment to the account specified in the “Request to Pay” message
- 4 Merchant’s device scans a QR code on consumer’s smart phone or sticker and sends a “Request to Pay” message



Consumer instructs their DFSP to initiate a push payment to the account specified in the “Request to Pay” message
- 5 Biller or merchant has consumer’s payment address on file; sends a “Request to Pay” message to consumer



Level One Use Case: C2B



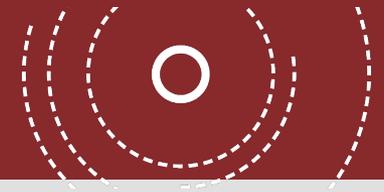
Make payments to pay *bills* (schools, taxes, etc.) – at a business or online



Unique Requirements

- Identification of paying customer to biller's account system
- Liability for payments to wrong biller/wrong account
- Bill "presentment" to consumer
- Support recurring payments

Level One Use Cases: C2B



Connect to *other financial services* (credit, savings, insurance, etc.)



Unique Requirements

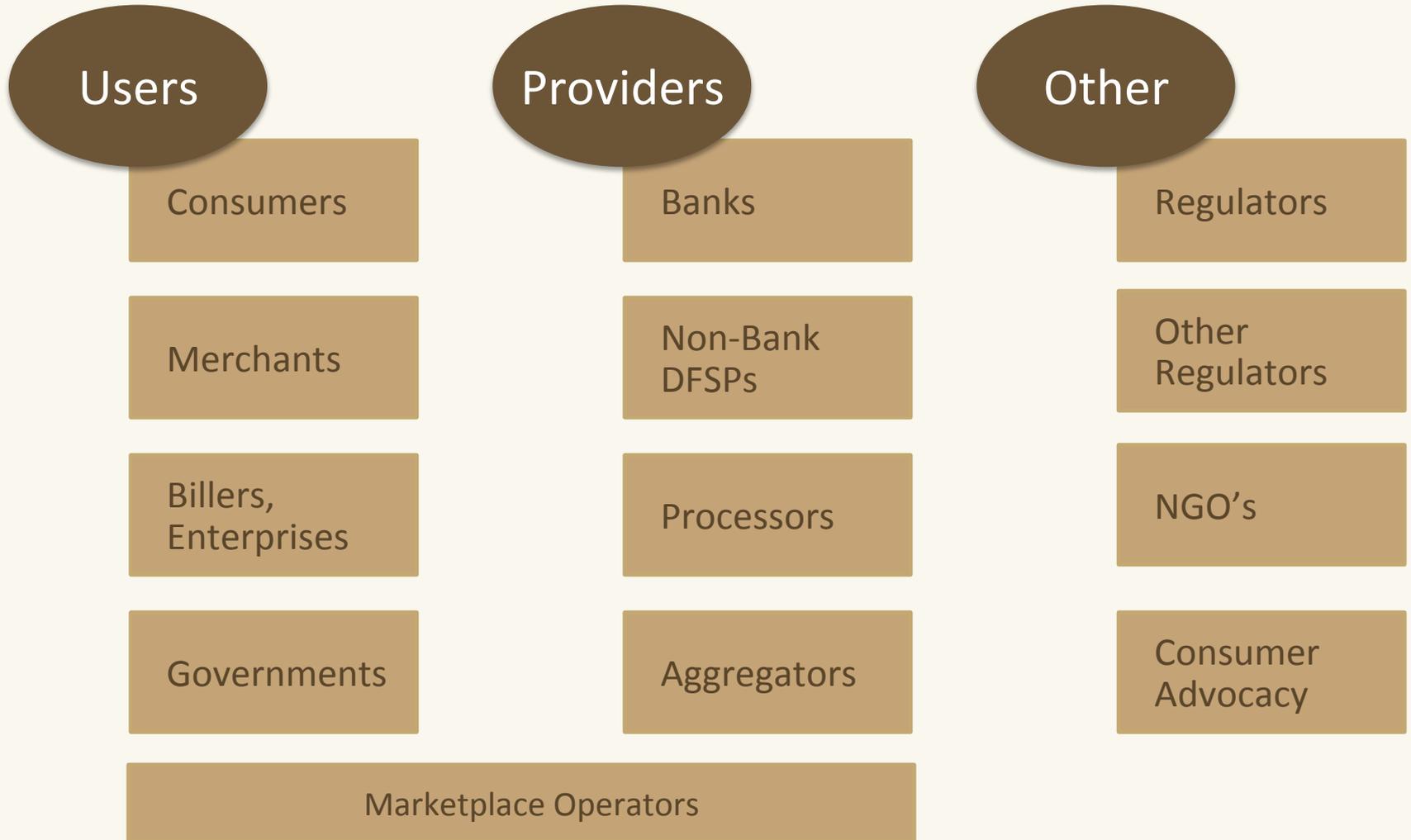
Many issues in common with bill payment, but also

- Management of cross-provider support
- Management of data privacy issues

Stakeholder Perspectives – Discussion and Exercise

5

Stakeholder Perspectives - Discussion



World Tour



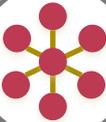
6

UK – Faster Payments



Transaction Accounts

- Expanding accounts for unbanked not a primary focus of regulators, however
- Regulators have expanded capabilities for eMoney issuers and payments services providers



Digital Platform

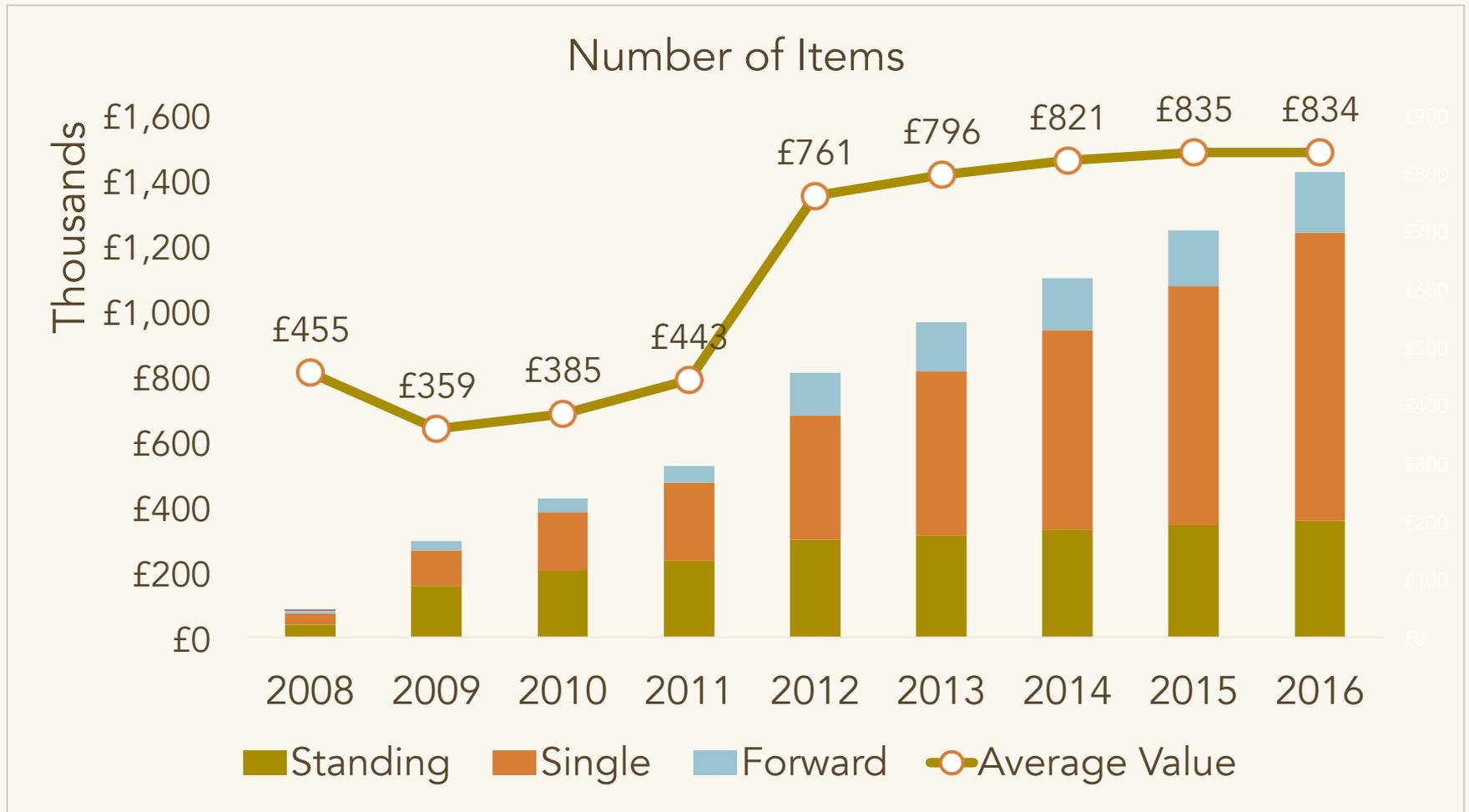
- Competition authority instructed banks 10 years ago to develop faster payments
- Banks set up a new scheme and hired an operator: real-time, open-loop, credit push, participant governance
- Supports multiple use cases; low cost, no interchange



Notable...

- Currently many smaller banks and PSPs access system through large banks; change is underway
- Operator VocaLink creating a merchant payment product using infrastructure

UK – Faster Payments



Mexico - SPEI



Transaction Accounts

- Non-bank financial institutions allowed to open accounts, but penetration is minimal
- Pioneer in use of tiered KYC



Digital Platform

- SPEI – real-time, credit-push, open-loop system used for both commercial and retail transactions
- Used by all financial institutions; run by Central Bank



Notable...

- As of August 2017 all banks will be required to offer simple accounts at no cost to beneficiaries of government subsidies
- Moving to 24 X 7 X 365 operations

Mexico - SPEI



Peru - Bim



Transaction Accounts

- eMoney issuance by banks and non-banks enabled by regulation; minimal non-bank issuance to date



Digital Platform

- BIM platform for eMoney interoperability is real-time, credit-push, open-loop, governed by participants
- Operator hired by scheme provides switch and wallets



Notable...

- Common brand; common user interface and account opening procedures; agent interoperability for account opening and cash-in, cash-out
- Innovative agent liquidity solutions

Peru - Bim

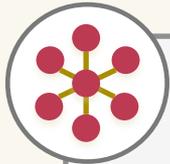


China



Transaction Accounts

- Dominated by Chinese Internet companies: Alipay and WeChat
- Alipay has 450 Mn and WeChat has 697 Mn active monthly users



Digital Platform

- Alipay and WeChat are closed-loop payment services
- Domestic real-time payments system for both retail and commercial payments
- China UnionPay is the main domestic payments card clearing and settlement system



Notable...

- Dramatic surge in mobile payments
- Extensive usage of QR codes in payments
- Payments drive commerce – proximity and remote; revenue from payments business is viewed as an adjacency

China



India



Transaction Accounts

- National strategy to increase bank account ownership – first through “Jan Dhan” program and now through Payments Banks – limited charter



Digital Platform

- National suite of payments infrastructure programs include IMPS: real-time, credit-push, open loop
- Run by NPCI bank owned consortia – RBI driven
- Parallel/integrated G2P (ABPS), card (RuPay) and bill payment (BBPS) systems



Notable...

- Closely tied to Aadhaar biometric identity database for KYC, CICO authentication and some payments transactions
- Recent government “de-cashing” dramatically increasing merchant acceptance

India



India

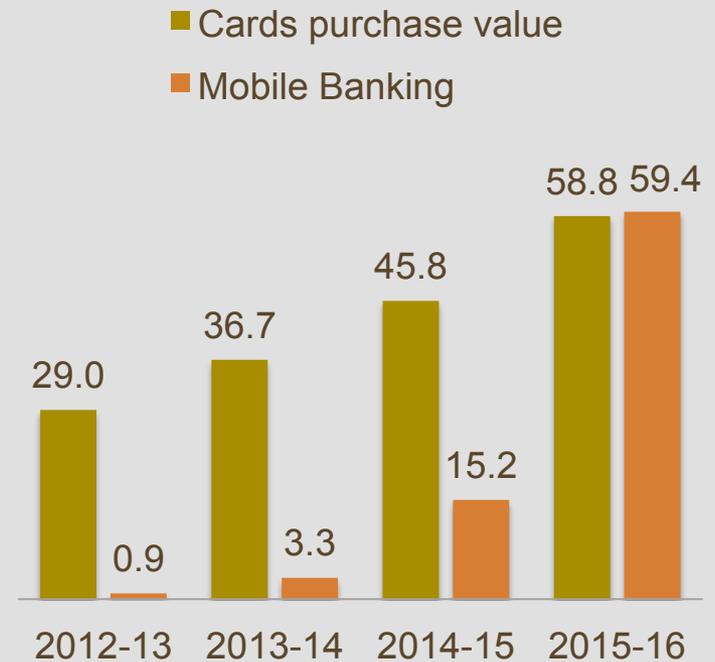
Bank Accounts

Number of accounts and cards issued under Government's Financial Inclusion Program (Jan Dhan) (In Millions)



Card Vs. Mobile

Card includes debit and credit cards
Mobile Banking includes IMPS transactions (In USD Billions)



Indonesia



Transaction Accounts

- Variety of account issuers: Commercial banks, rural banks, and mobile money operators
- New regulation in 2015 (Laku Pandai) permits certain type of banks to offer agent/branchless banking services



Digital Platform

- BI-RTGS is the RTGS system operated by Bank Indonesia
- SKN is a paperless clearing system used by banks to clear fund transfers \leq IDR 100 million (~US\$7400)
- Four ATM networks do not interoperate
- BCA is the national debit card network



Notable...

- In 2013, three mobile money services became interoperable by establishing bilateral connections
- As on March 2017, Laku Pandai has opened 5 million accounts with outstanding savings of IDR 244 billion

Indonesia



Jordan - JoMoPay



Transaction Accounts

- Both banks and non-banks can open account; do not use the term “eMoney”
- Regulator plans to allow non-bank transaction accounts accelerated with influx of refugees



Digital Platform

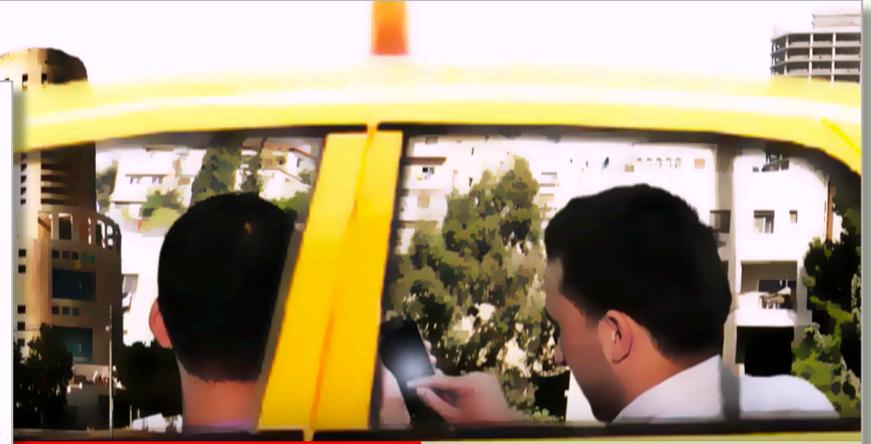
- Central Bank led effort to develop “JoMoPay”. A real-time, open-loop, credit-push system
- Supports multiple use cases; participant agreement on low cost to end users
- Recently transferred control from Central Bank to a participant-owned consortium



Notable...

- Common brand
- Aggressive pursuit of multiple use cases, including many types of merchants and billers – using either QR code or NFC sticker technology

Jordan - JoMoPay



The Philippines



Transaction Accounts

- 31 eMoney issuers out of which 26 are banks
- Approximately 4 million mobile money accounts and 20 million prepaid accounts



Digital Platform

- PhillPass, the wholesale RTGS system, is not for consumer purposes
- Five ATM Networks interoperate via bilateral connections
- GCASH and PayMaya (formerly Smart Money) are currently testing interoperability

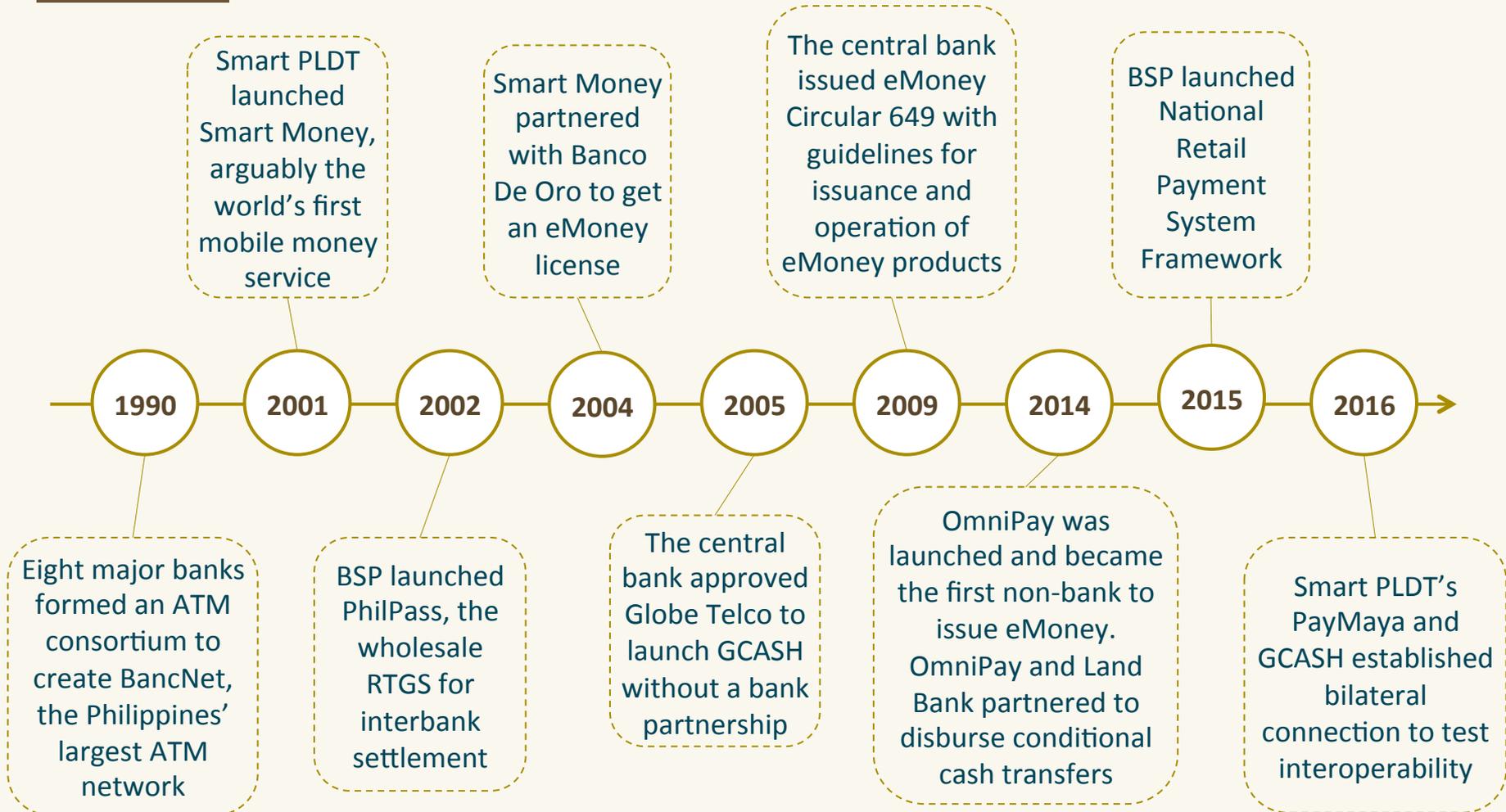


Notable...

- In December 2015, the central bank launched National Retail Payment System Framework to promote interoperability among financial service providers

The Philippines

Key Milestones



Thailand



Transaction Accounts

- High penetration of mobile phones and growing mobile payments market
- Banks are the main providers of financial services
- Non-banks drive eCommerce and mCommerce payments



Digital Platform

- ITMX, owned by major commercial banks, provides various payment services
- BAHTNET is the RTGS system operated by Bank of Thailand
- PromptPay, launched in October 2016, is the national ePayment system to enable retail interbank fund transfer



Notable...

- In 2015, three major mobile money operators became interoperable (switching services by Mastercard)
- In 2017, Visa, Mastercard and UnionPay introduced a standardized QR code for payments

Thailand

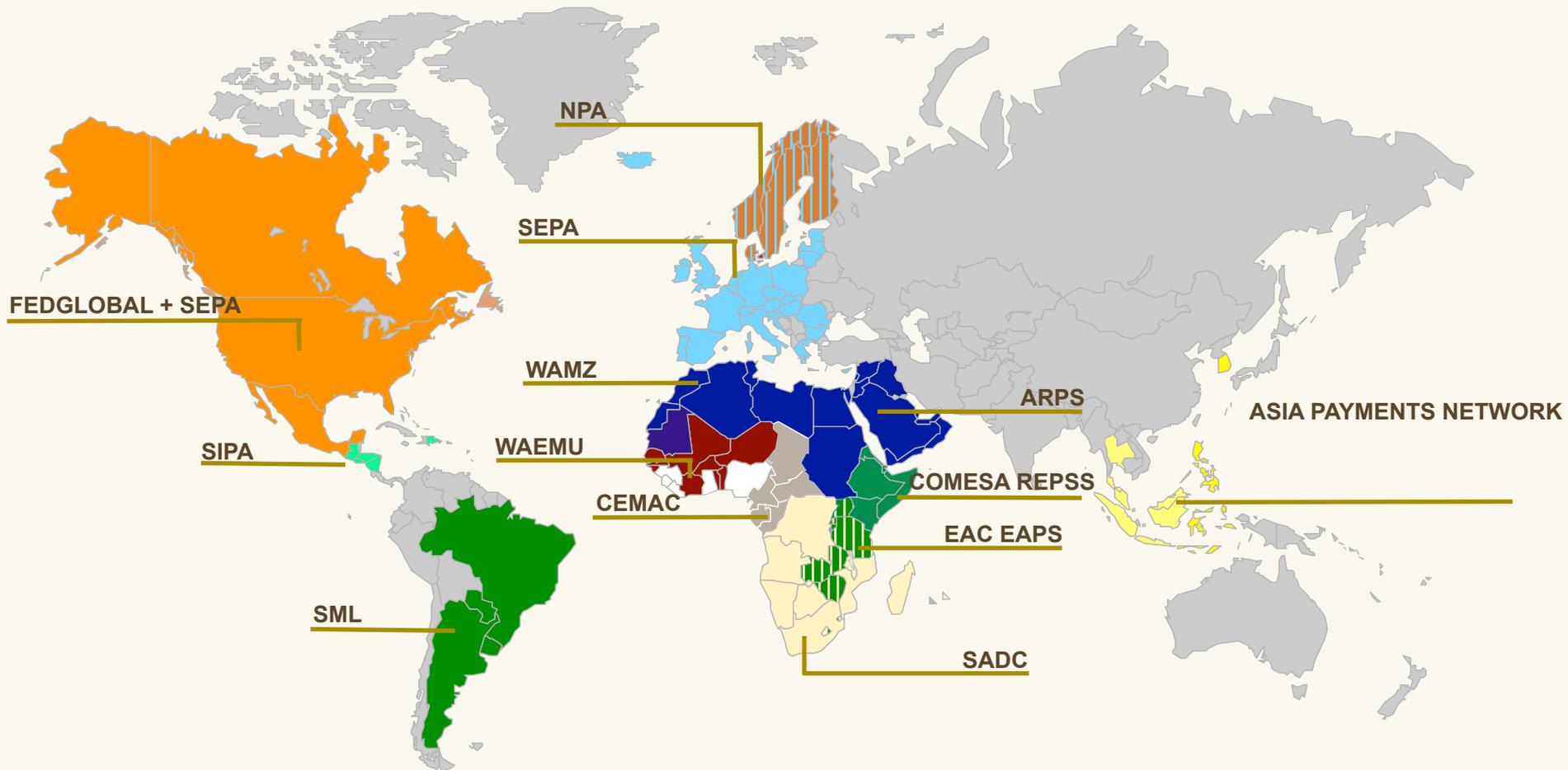


Regional Approaches



7

Regional & Multi-Country Payment Groupings are Multiplying



Source: Glenbrook research and analysis

Regional Payments System Approaches

Diverse motivations:

- Economic and/or monetary unions, common market zones
- Population patterns
- Common currency
- Common language
- Risk reduction
- Improve remittances and/or financial inclusion

Key variables:

- Design or default
- Central bank involvement
- Scheme development
- Shared platform or switch
- Settlement entity
- Foreign exchange management

- Regional retail payments scheme for Euro transactions in the European Union + six other countries (34 total)
- Multiple payment types: credit, debit (consumer and business), mobile – all mandatory and interoperable
- Instant payment scheme in development – optional participation to start
- Scheme body – European Payments Council
- Shared underlying legal foundation in each country
- Scheme messages based on ISO 20022
- Multiple clearing and settlement mechanisms operating under a single scheme
- Non-bank payment services providers
- Cross-border but not cross-currency

EAPS & REPSS

EAST AFRICAN PAYMENT SYSTEM

- Kenya, Rwanda, Tanzania and Uganda
- Links national RTGS systems; High-value, bank-to-bank transfers during bank business hours; SWIFT messages
- Focus on trade
- EAC currencies
- Began in 2013

REGIONAL PAYMENT & SETTLEMENT SYSTEM

- Eligible countries from East Africa Common Market & COMESA
- Via RTGS during bank business hours
- Focus on trade
- USD and Euro
- Began in 2014

SADC

Southern African Development Community

- SADC Bankers Association directs 15 country cross-border payment scheme
- SIRESS = regional settlement system; Rand only today (USD in development); 24x7x365 operation under consideration
- High-value payments between banks in operation with retail, mobile remittances in development
- Non-bank participants
- Financial inclusion now a central goal

<http://www.sadcbanking.org/>



Latin America

INTERCONNECTION PAYMENTS SYSTEM (SIPA)

- Operated by central banks in the Central America Monetary Council
- Focus on high-value transfers in USD between banks; risk reduction
- SWIFT messages with single settlement engine



<http://www.secmca.org/SIP.html>

LOCAL CURRENCY SYSTEM (SML)

- Bilateral agreements between four regional central banks to exchange inter-bank payments
- Focus on lowering cost of commerce between key trading partners
- Bank participants only; optional participation
- Daily publishing of bilateral exchange rates

<http://www.bcb.gov.br/pt-br/#!/n/sml>

Other Implementations

FEDGLOBAL ACH PAYMENTS

- Central bank ACH operator acting as gateway in/out for retail payments (25 countries)
- Optional to send with receiving mandatory; multiple Fx options
- Focus on improving cross-border payment exchange via lower costs, transparency and predictability
- ISO 20022 or local format conversions
- Used for U.S. Social Payments and commercial

https://www.frbervices.org/serviceofferings/fedach/fedach_international_ach_payments.html

ARAB REGIONAL PAYMENTS SYSTEM (ARPS)

- Cross-border, retail payments – credit push
- Central, shared payments switch
- One settlement account per participating currency (local + ERU and USD); Settled via RTGS
- Initial focus on trade, remittances and inter-bank transfers
- In development

Multi-Country Payment Enablers

- Governance – Formal scheme organization and management body
- Volume – Broad membership, participation (interoperability) and multiple payment types fosters volume growth; shared switch
- Rules – Common formats, standards and processes promote Straight-Through-Processing (STP) and lowers costs
- Settlement – Reduce complexity as much as possible
- Common regulatory legal foundation for key aspects (revocability, consumer protection, value limits, etc.)
- Incentives to participate – DFSPs need ability to determine prices and foreign exchange rates

Resources



8

Resources Available for Level One Implementations

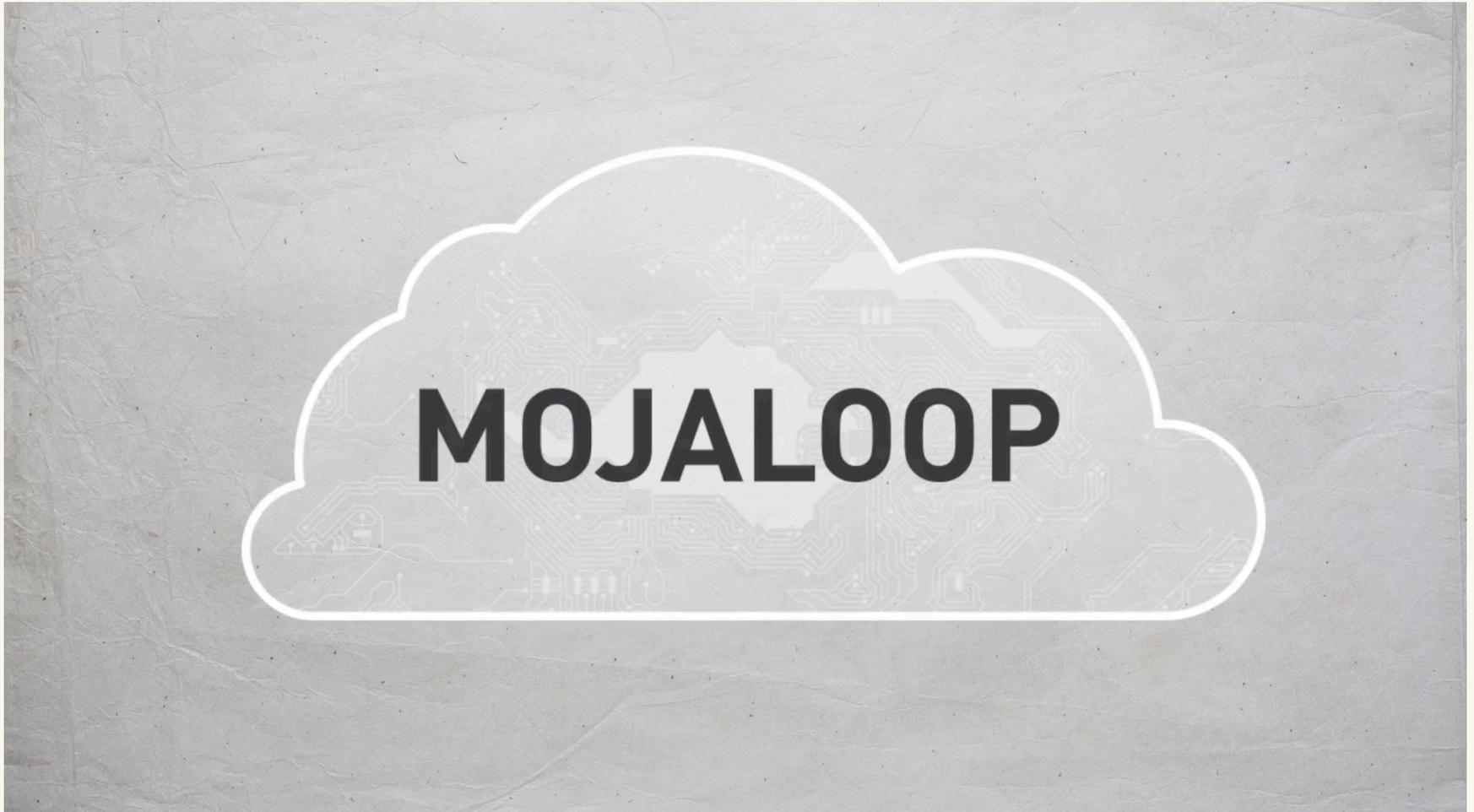
Business Focus

- Glossary
- L1P Reference Rules
- Fee Scenarios and Descriptions
- Research Reports:
- Settlement
- QR Codes
- Risk Management
- L1P Boot Camp

Technical Focus

- MojaLoop: the Reference Implementation
- The Prototype
- API Documents
- User Requirements

Resources: Mojaloop



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