

Blockchain Workshop/Conference

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Blockchain in Trade Processes WP Financial Services

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Content of Finance chapter

- ❖ many different business processes, tools, areas in Finance
- ❖ choice criteria for the chapter
- ❖ point of view of operators in Finance
- ❖ improvement & innovation needs
- ❖ lack of alternative solutions
- ❖ scope and safety of network and data
- ❖ legal aspects and notarization





Main areas

❖ **Payments:**

Local, regional, cross-border payments;
Intercompany payments;
Nostro Accounts management & liquidity optimization

❖ **Trade finance:**

Purchase Order Financing;
Invoice Financing;
Letter of Credit;

❖ **Other: Insurance**





DLT for local, regional, crossborder payments

Effectiveness of payments, as a network business, depends on:

- ❖ a pervasive network of Payment Service Providers
- ❖ beneficiary's banks reachability
- ❖ the reliability of clearing and settlement mechanisms
- ❖ the speed of clearing and settlement, determining the speed of payment finality





DLT for local, regional, crossborder paym'ts

Bitcoin payments

Most important within cryptocurrency payments

Unavoidable comparison with traditional payments

- execution time: 1 hr average for deeming final:
 - In 2009 great advantage vs traditional system
 - Now instant payment scheme (10 sec) for SEPA EUR
- scalability: with current network 5-7 trans/sec: low
- privacy: transactions public by design
- traceability: complicated or impossible
- Bitcoin price: high volatility of cross rates vs fiat curr.
- Regulators limits:

can't scale at industrial level for payments





DLT for local, regional, crossborder paym'ts *with a DLT/blockchain permissioned*

Many banks towards DLT/blockchain permissioned

Features:

- Security (Non-repudiation, encryption, traceability, privacy)
- Automation/programmability (smart contracts)
- Performance (high speed of digital assets transfer)
- High potential interoperability and standardization

Scope:

- With cryptocurrency:
 - reduced execution time, except prefunding in crypto/fiat curr.
- With fiat currency only:
 - Time same of traditional (rate conversion, side applications)

No DLT industrial solution, joint studies banks-fintechs

Central Banks: BoJ-ECB Stella proj (financial markets)
(WP contribution & source IntesaSanpaolo)





Intercompany payments *issues and challenges*

Intercompany accounting:

- problems: errors, fraud → costs
- focus on reconciliation issues (*extra work*)

- ❖ Business processes: manual data entry
- ❖ Data analysis: inconsistency & variation across systems
- ❖ System architecture: lack of integration

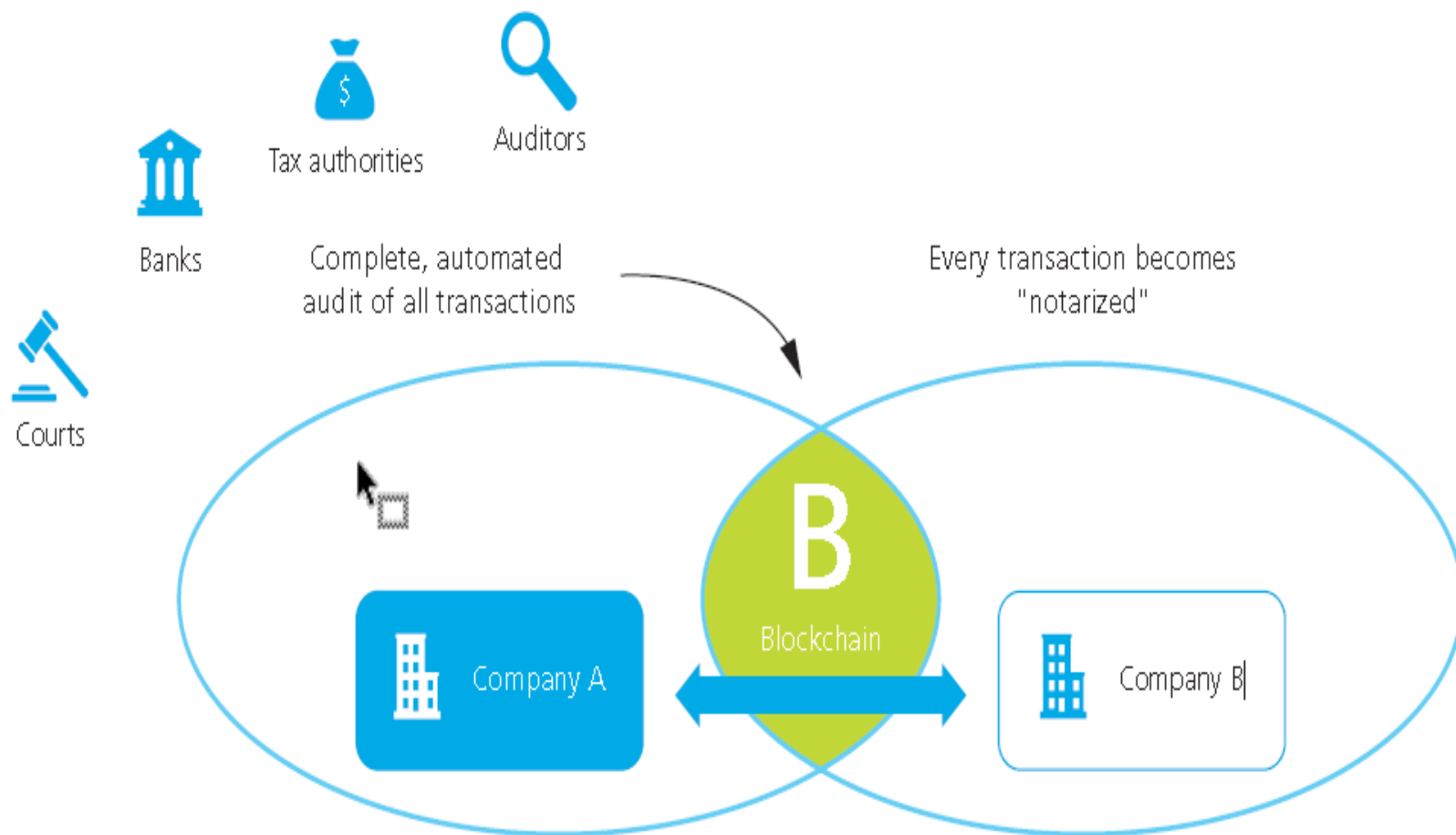




Intercompany payments *current process*



Intercompany payments *blockchain accounting*



Blockchain entry serves in both companies' accounting



Intercompany payments *blockchain accounting*

- a company could write their transactions directly into a joint register
- creating an interlocking system of enduring accounting records
- where falsifying or destroying data is practically impossible.

Blockchain capabilities:

- ❖ smart contracts to identify data mismatches and notify the relevant parties for action
- ❖ distributed ledger: full stakeholder visibility
- ❖ irreversibility: operations and audits

(WP contribution & source Deloitte)

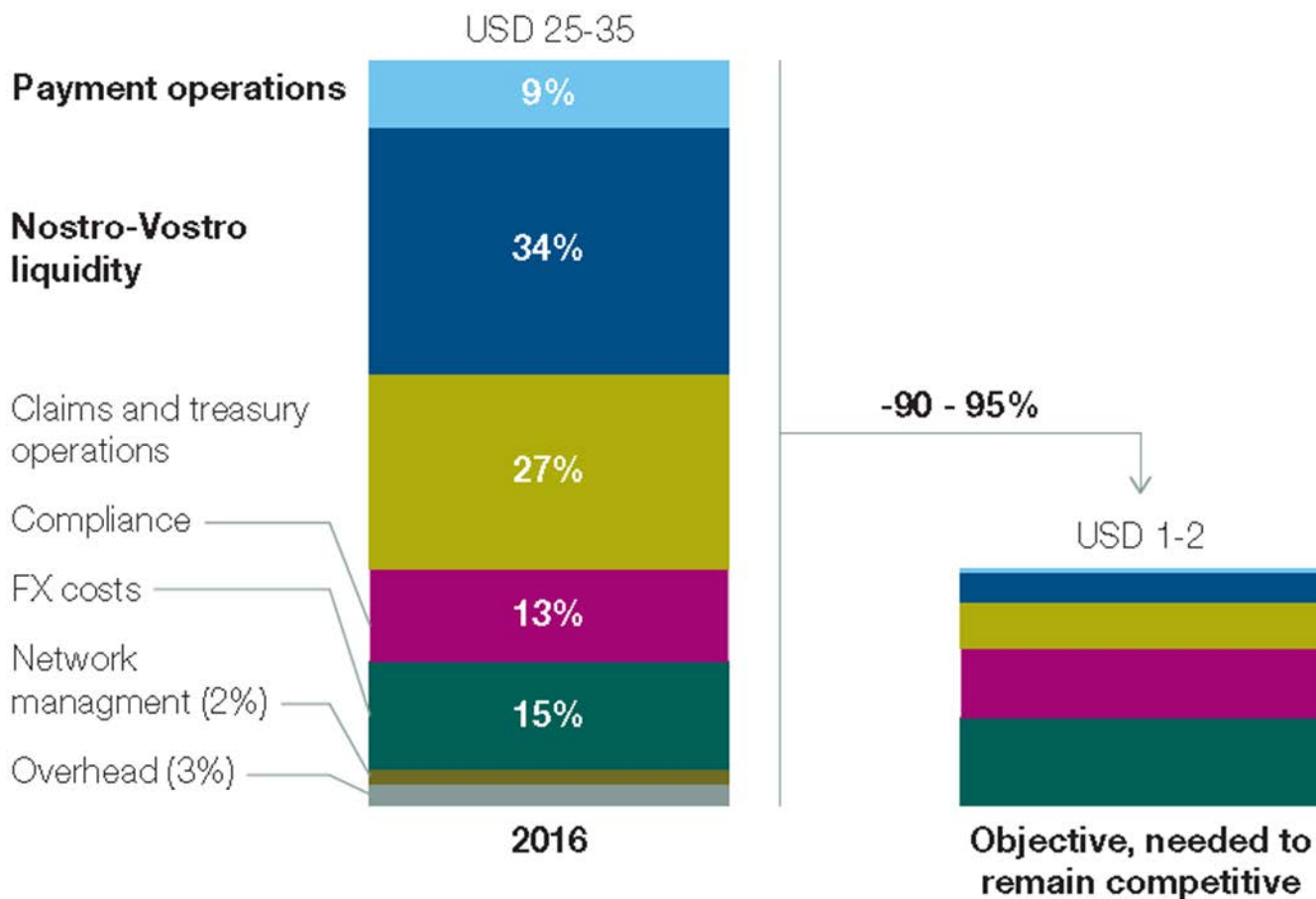




SWIFT Nostro Accounts management and liquidity optimisation

(SWIFT Final Report 8th March 2018)

Cost per international payment transaction





SWIFT Nostro Accounts DLT PoC

issues and objectives

Issues:

- ❖ Trapped/wasted liquidity for lack of real time info
- ❖ Cost of transaction reconciliation

Project objective:

Can DLT help banks optimise Nostro accounts real-time liquidity & reduce reconciliation operational cost?

Implied Application enhancements:

- ❖ End-to-end Nostro account entry workflows (UETR)
- ❖ Audit trail





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SWIFT Nostro Accounts DLT PoC

the project

Technical key requirements:

Strong governance, Data controls, Standardisation, Identity framework, Reliability, Scalability

Environment characteristics:

- ❖ SWIFT DLT Sandbox on Hyperledger Fabric 1.0
- ❖ Private permissioned ledger
- ❖ Selective data distribution (access, storage in relevant nodes)
- ❖ Integration with Certification Authority
- ❖ Smart contract (business logic and workflows)

Test strategy :

34 banks tested in several phases 34 business cases





SWIFT Nostro Accounts DLT PoC

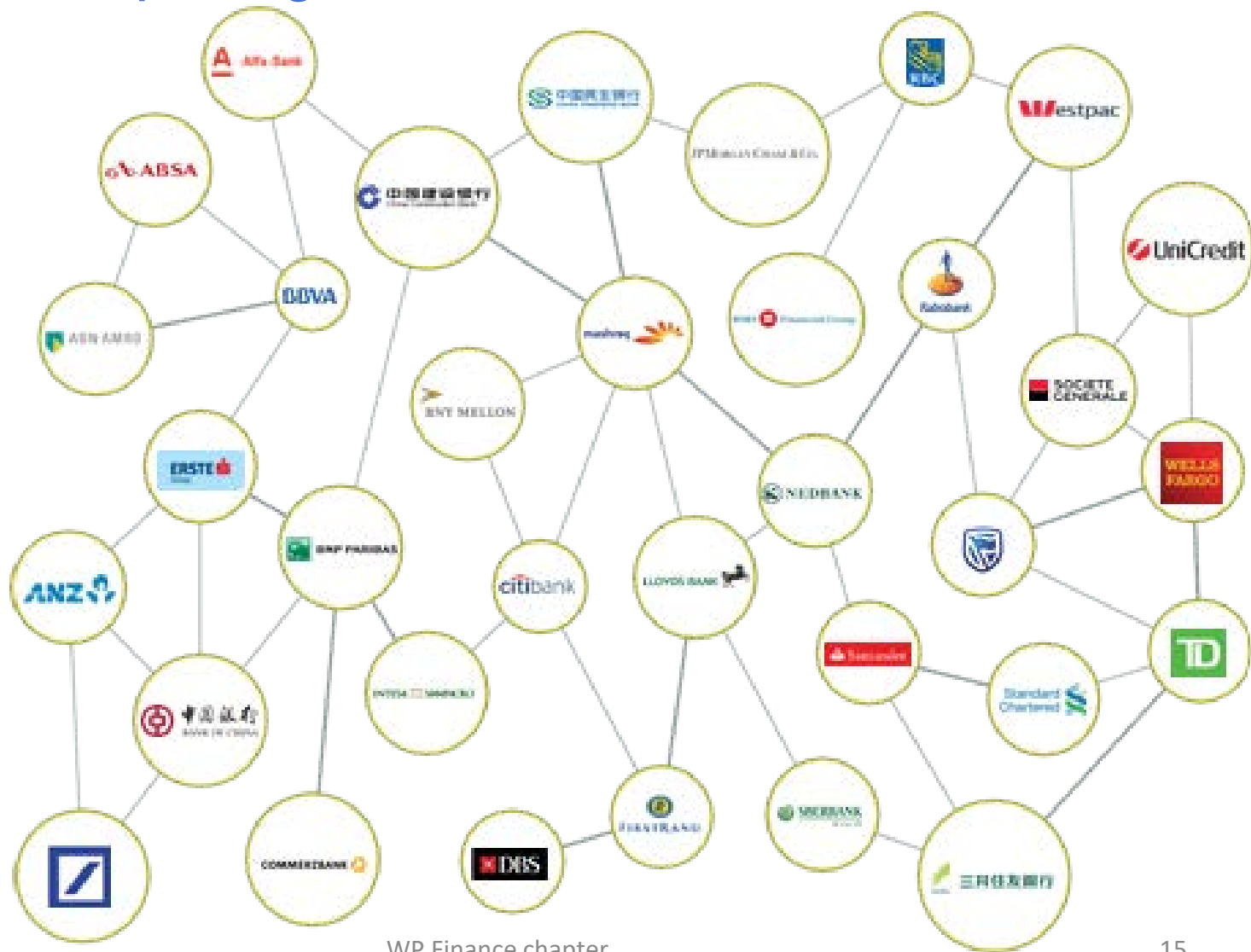
main conclusions

1. Adequacy of the DLT based Nostro solution as defined by the functional requirements
2. Value of DLT solution will depend on bank's liquidity management capabilities, level of automation and centralisation
3. A “one size fits all” DLT solution will not work
4. New hybrid DLT architectures bring significant progress but it is still early days





SWIFT Nostro Accounts DLT PoC *participating banks*





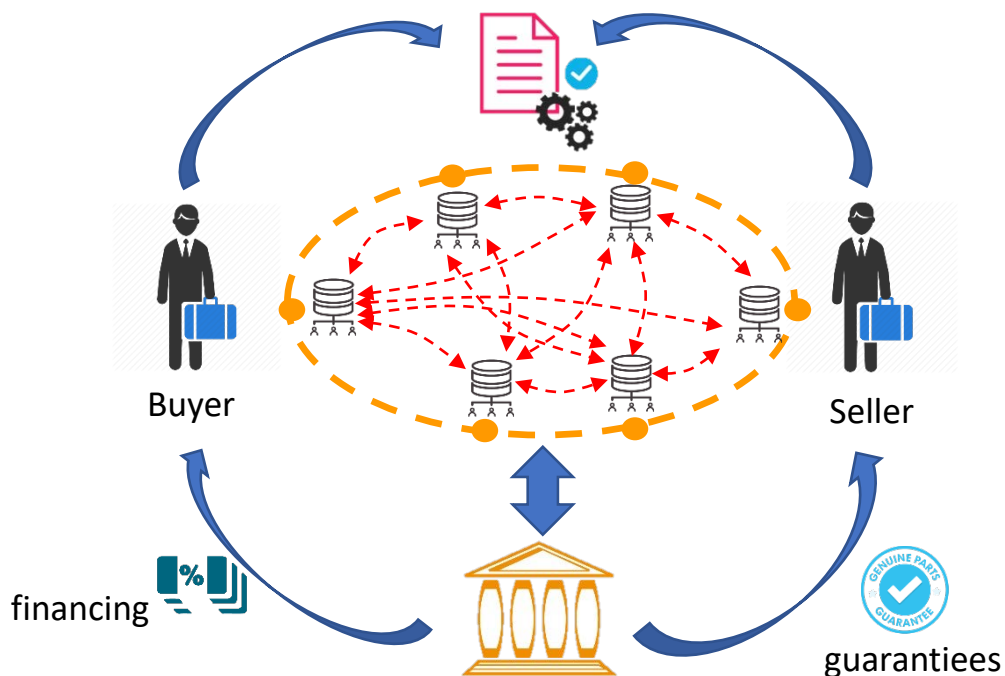
Purchase Order Financing *workflow*





Purchase Order Financing *on blockchain*

Smart Contract created
on the blockchain based on a Purchase Order

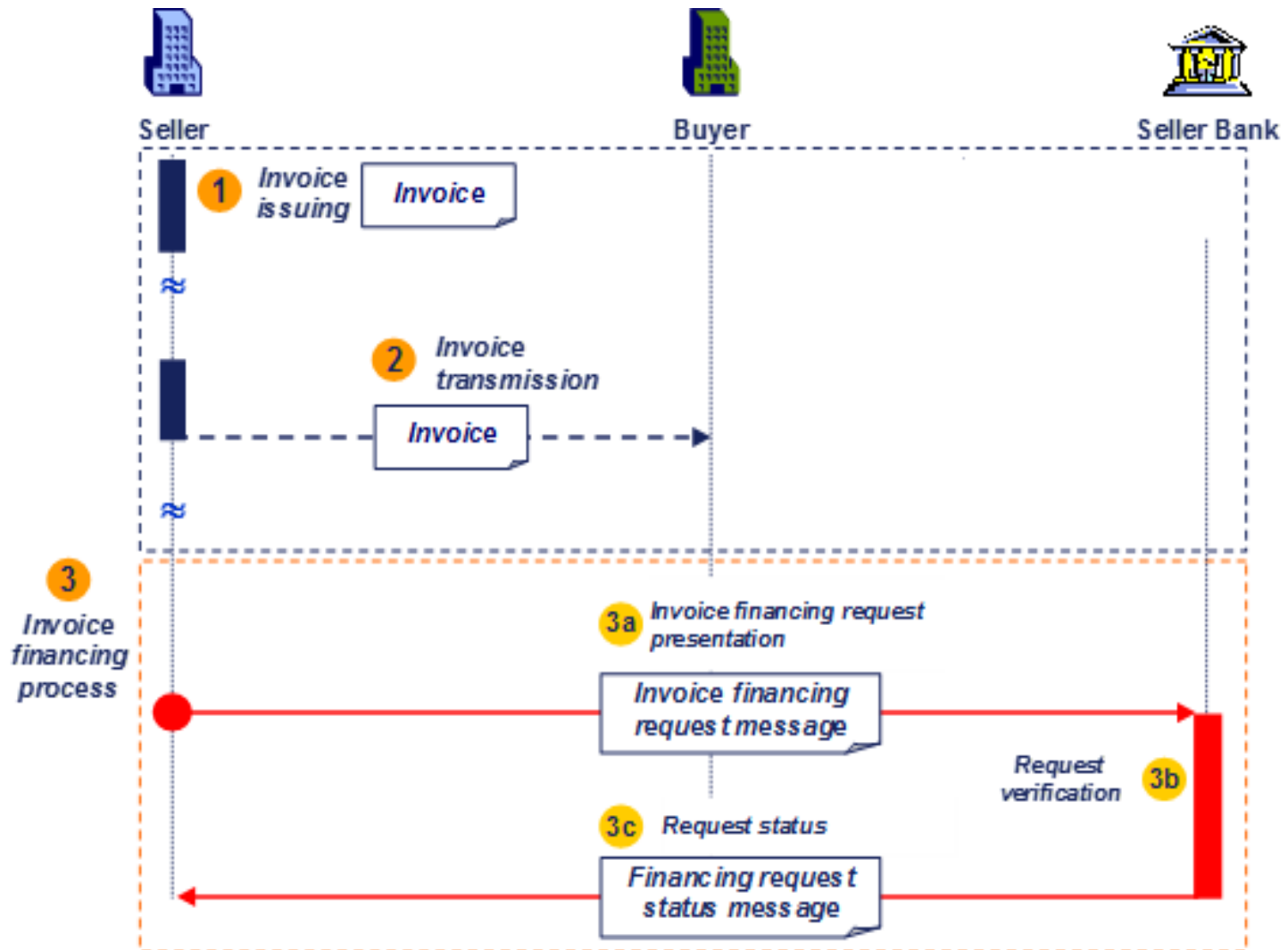


Smart contracts help traders exchange assets in a **transparent**, conflict-free, way while avoiding the services of intermediaries. Smart contracts define, **through an unalterable code**, the rules and penalties around an agreement in the same way that a traditional contract does, but also automatically enforce those obligations thanks to the **blockchain** that **spread all the information to all the interested parties**

Having the complete details of the order on the blockchain in realtime allow financiers to provide credit facilities to the Buyer (POF) or a financial guarantee to the Seller and review the term of the purchase order in real time

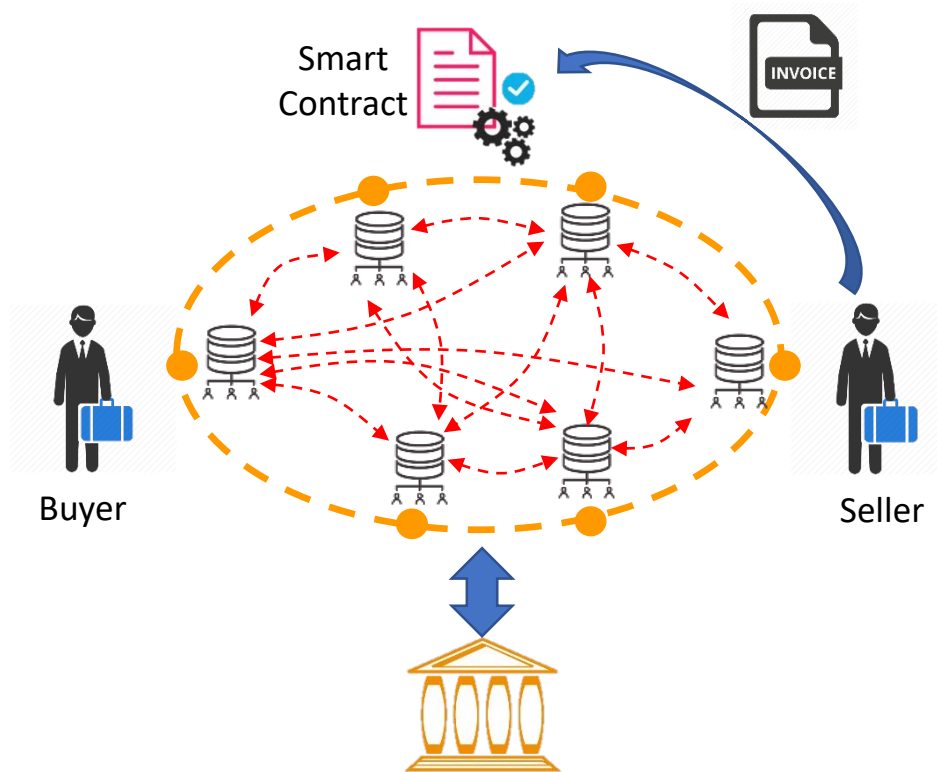


Invoice Financing *business scenario*





Invoice Financing *blockchain system*



Once the financier provides guarantee to the payment, which is captured real time on the blockchain, the Seller proceeds with the shipment of the goods using the provided insurance, linking the invoice to the smart contract on the blockchain

When the Seller invoices the Buyer, the bank can immediately provide short term financing to the Seller, resulting in an improved economics of capital allocation and reducing the fraud, thanks to the blockchain that spreads the invoice information real time without risks of duplicated factoring request





Letter of credit *main issues paper LC*

- ❖ Payment Disputes due to Contractual Ambiguities
- ❖ 4 out of 5 LC documents first version contain inaccuracies, errors, discrepancies
(*source: "Industry estimates"*)
- ❖ Payment Delays from Data Errors in the Contract
- ❖ 70% of LC documents are rejected on first presentation (*"ICC"*)
- ❖ Increase Costs and Overhead due to LC Amendments
- ❖ 7-10 days av. LC issuance time (*"Letterofcredit.biz"*);
US\$250 av. issuance cost (*"creditmanagementworld.com"*)

(source Cognizant)





Letter of credit decline – open account terms

- ❖ goods are shipped and delivered before payment
- ❖ importer: working capital bonus; exporter: risk
 - risk mitigation → Supply Chain Finance tools





Letter of credit *blockchain-based*

LC: a smart contract

- between financial institution and supplier
- guarantees payment when goods delivered
- codifying conditional clauses (time, place, mode of shipment, and delivery)

Benefits

- Reduction of contractual ambiguities/errors (smart contract coding of conditions)
- Early discovery of discrepancies/errors by all stakeholders taking required actions & authorizations
- Reduced time of LC amendments
- Payments: reduced disputes; workflow smart contracts driven

Pilot: BBVA: LC full time from 7-10 days to 2.5 hrs





Insurance

International commercial policies: manual transfer/verification of multiple paper agreements

➤ Blockchain key areas of innovation:

Client onboarding:

compliance-KYC: key documents issues & fixing time

➤ DLT permissioned : documentation available, secured, shareable

Underwriting

Long time to evaluate risk & decide level of cover

➤ w/ DLT: external data risk-related, semi-automatic pricing, shorter times, visibility, trust in complex multinational programs.





Insurance

Claims processing

Similar advantages of Client onboarding, including fraud detection.

Insured goods and events

- Register in DLT each good and transfer data.
Timely handling of possible fraud and claims

Pilots & Initiatives:

❖ AIG and Standard Chartered, with IBM

- ❖ smart contract master (UK), local policies (US, Singapore, Kenya)
- ❖ shared real-time view of policy data and payments

❖ B3i: 15 insurance companies

- ❖ collaboration of insurers&reinsurers explore using DLT in the industry value chain



Thank you

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