VI- Smart contracts and Distributed Ledger Technology

How smart contract works

Smart contract

| Events | | Status | Contents | Rules | | Assets |
| Input | Trigger | | | | Execute | Logics |

Blockchain environment
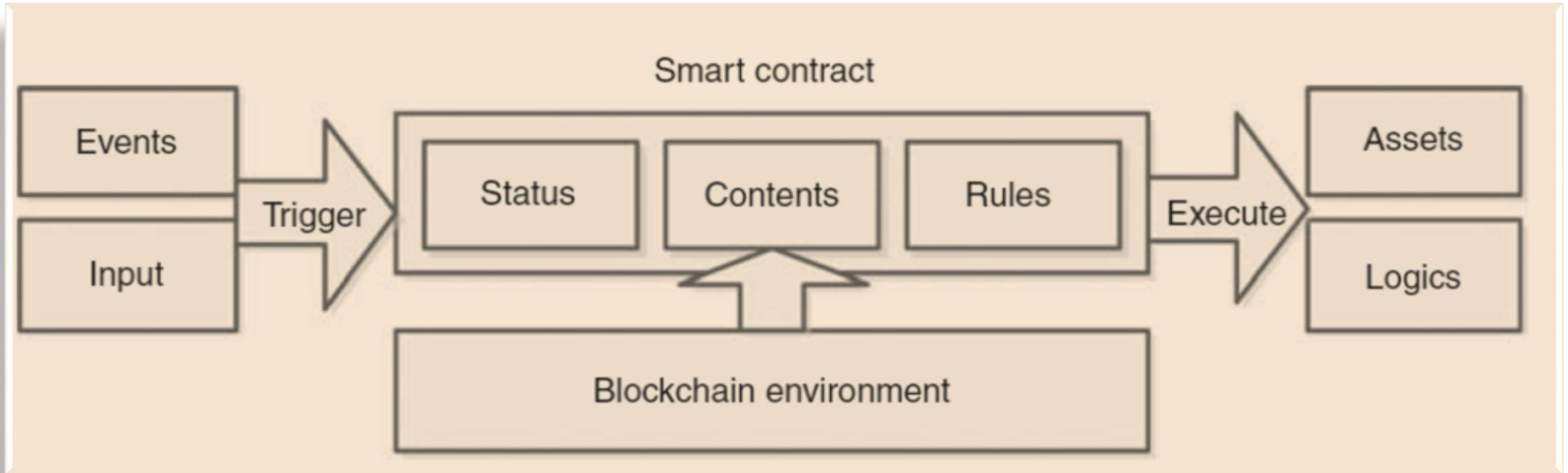
Smart contracts would need input on real world events from verifiers

Ehtereum was developed to handle more complicated smart contracts

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Private Distributed Ledger Technology (pDLTs): an introduction

pDLT is a **decentralized database** managed by multiple participants, across multiple nodes. Example: CORDA from R3
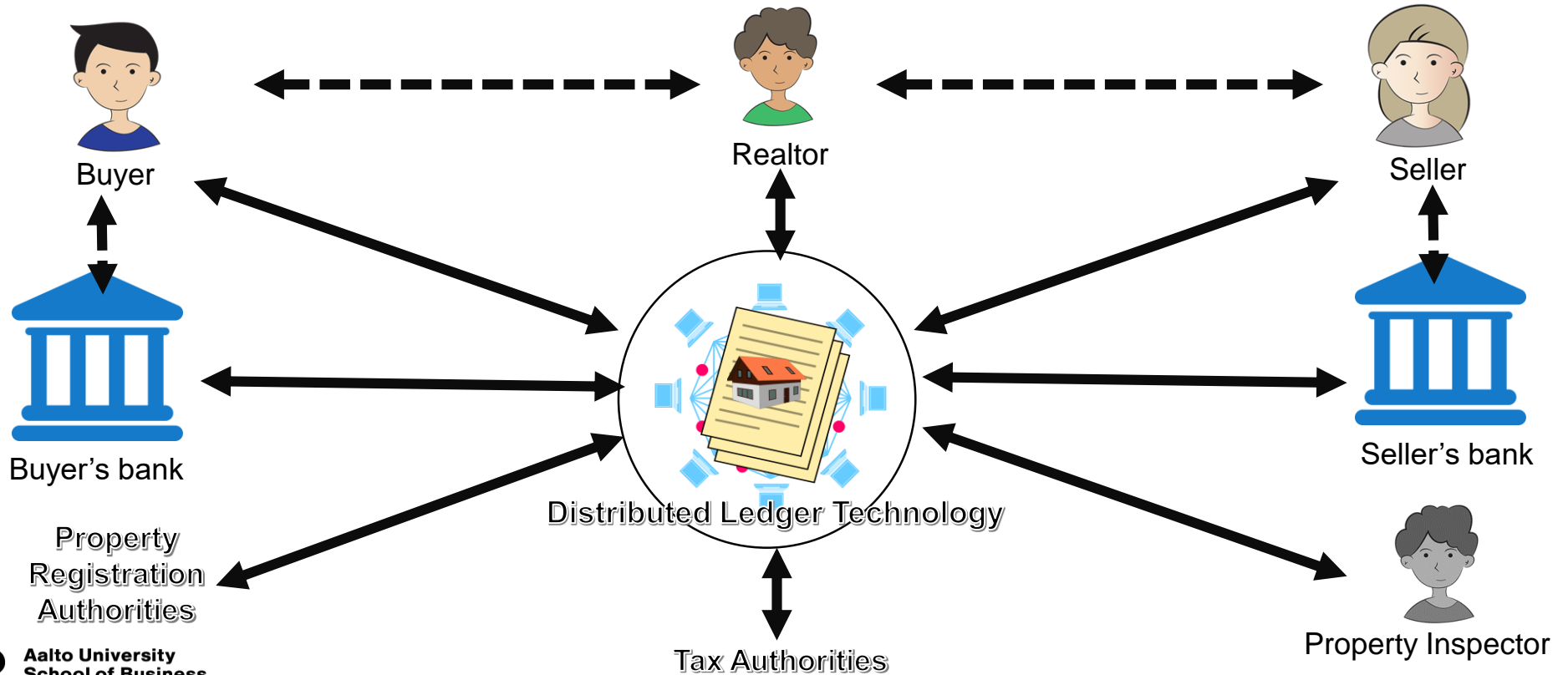
Unlike public blockchains, the transactions are considered private amongst the involved parties and are only cryptographically linked to the previous transactions that the current transaction depends upon. Consequently, transaction histories are only available to parties that participated in the transaction.

Private DLTs do not confirm transactions in batches, they confirm transactions in real-time.

Uses version of smart contracts under which the concerned parties mutually agree — eliminating the need for third parties.

In fact, pDLTs could also link digital version of existing legal contracts with digital signatures. In this manner, pDLTs promote themselves to be friendly towards existing regulations and laws.

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Example of a smart contract: housing sales

Buyer

Realtor

Seller

Buyer's bank

Distributed Ledger Technology

Seller's bank

Property Registration Authorities

Tax Authorities

Property Inspector

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Example of a smart contract: trade finance

L/C= Letter of credit

5
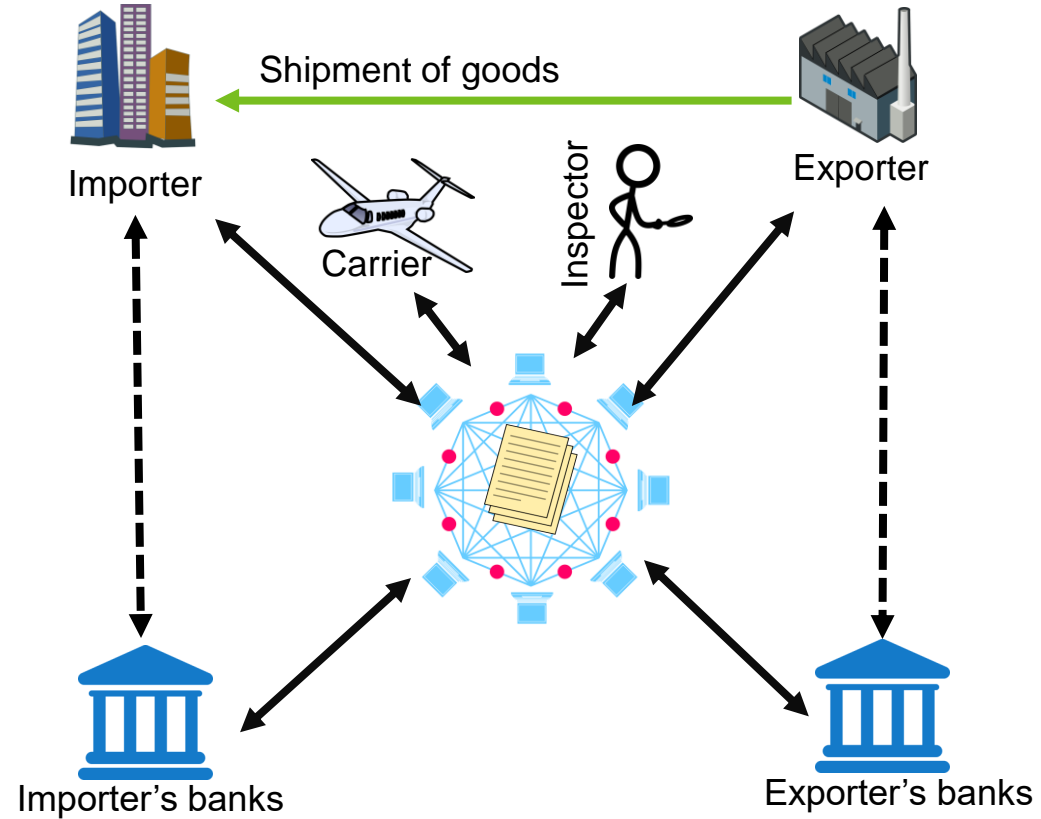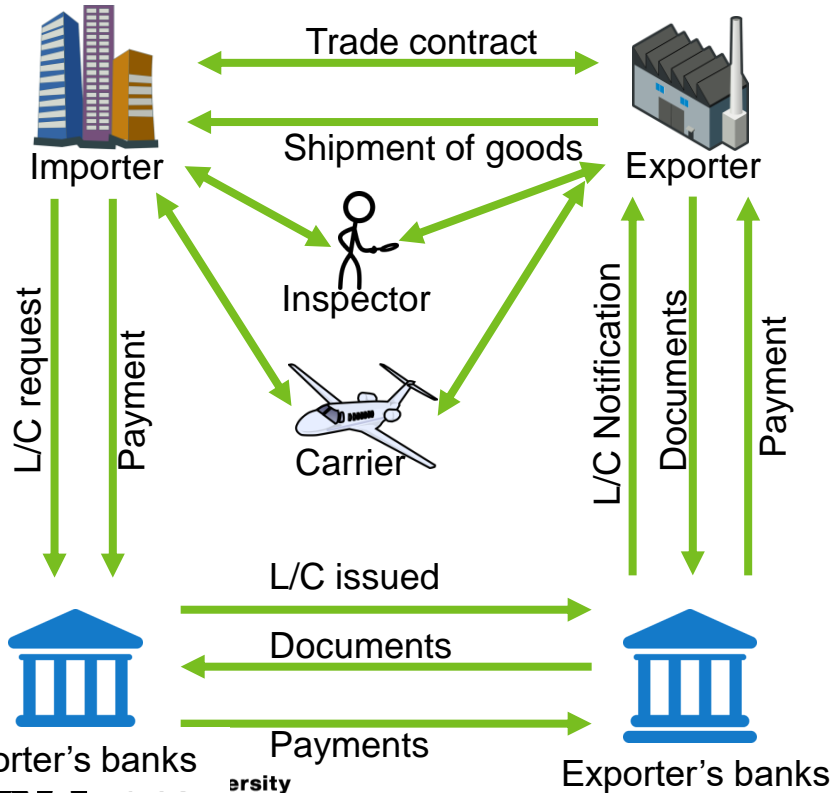
Understanding Blockchain business models

Key Partnership
Strengthening companies' ties in the supply chain

Strengthening data integrity

Facilitation of payments

Shared networks & elimination of lengthy processes

Key activities
Transform business process

Implement peer-to-peer network or its nodes

Key resources
Access via peer-to-peer networks

Improvements in verification, documentation, and audits

Value proposition
Reduced time and fee for transactions

Less intermediation

Access to new products and services

Customer relationship
Direct relations & Self service

Transparency & Automation

Channels
New peer-to-peer channels

New Applications and Software

Customer segments
New customers, digital savvy customers, customers in new geographies

Access to new segment of customers

Cost structure
Reduced search cost, negotiation cost, & transaction costs

Increased IT and training cost for individuals and companies

Revenue stream
Revenues without commission to intermediaries

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Source: Morkunas, V.J., Paschen, J., Boon, E. (2019) How Blockchain technologies impact your business model, Business Horizons, Vol 62, Pages 295—306