SAMBA
Swiss Association of MBAs

The Business Potential of Distributed Ledger Technology

Analysis and Recommendations for Action in the Financial Services Sector

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Motivation & Research Question

Academia

- The number of **publications** regarding blockchain and DLT is **rising**
- A **clear terminology and taxonomy** which puts the terms in relation to each other **is missing**
- This has **tremendous implications** for the generated **insights** since they **cannot be compared**

Practice

- Many organizations attribute **high relevance** to DLT in the following years
- Only a few large organizations have already put DLT into **productive use**

RQ1: How can the types of DLTs be classified using a taxonomy?

Strategy

RQ2: What is the impact of public DLTs on current and future value propositions in the financial services sector?

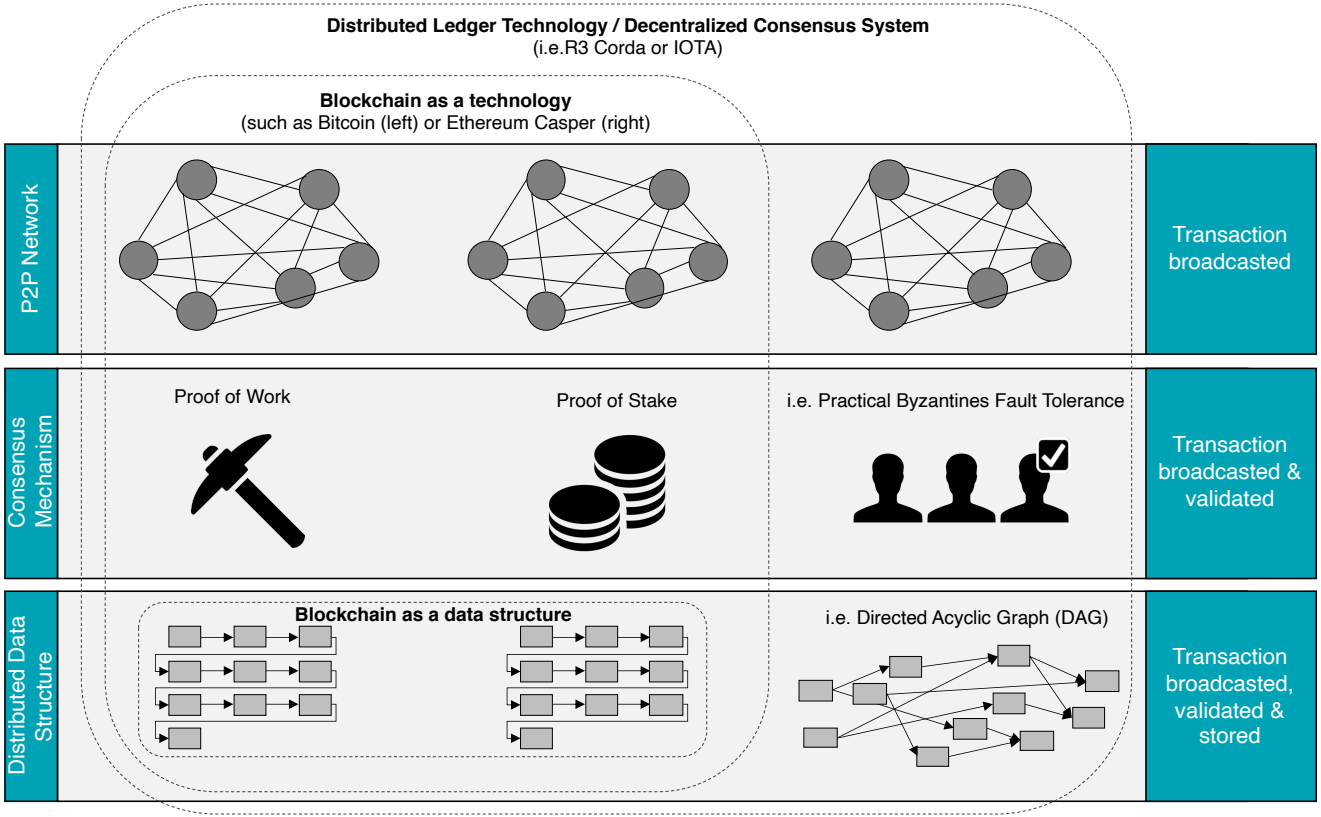
Process

RQ3: What is the impact of private DLTs on business processes in the financial services sector?

System

RQ4: To which propositions should IT departments adhere to generate positive business impact from DLT?

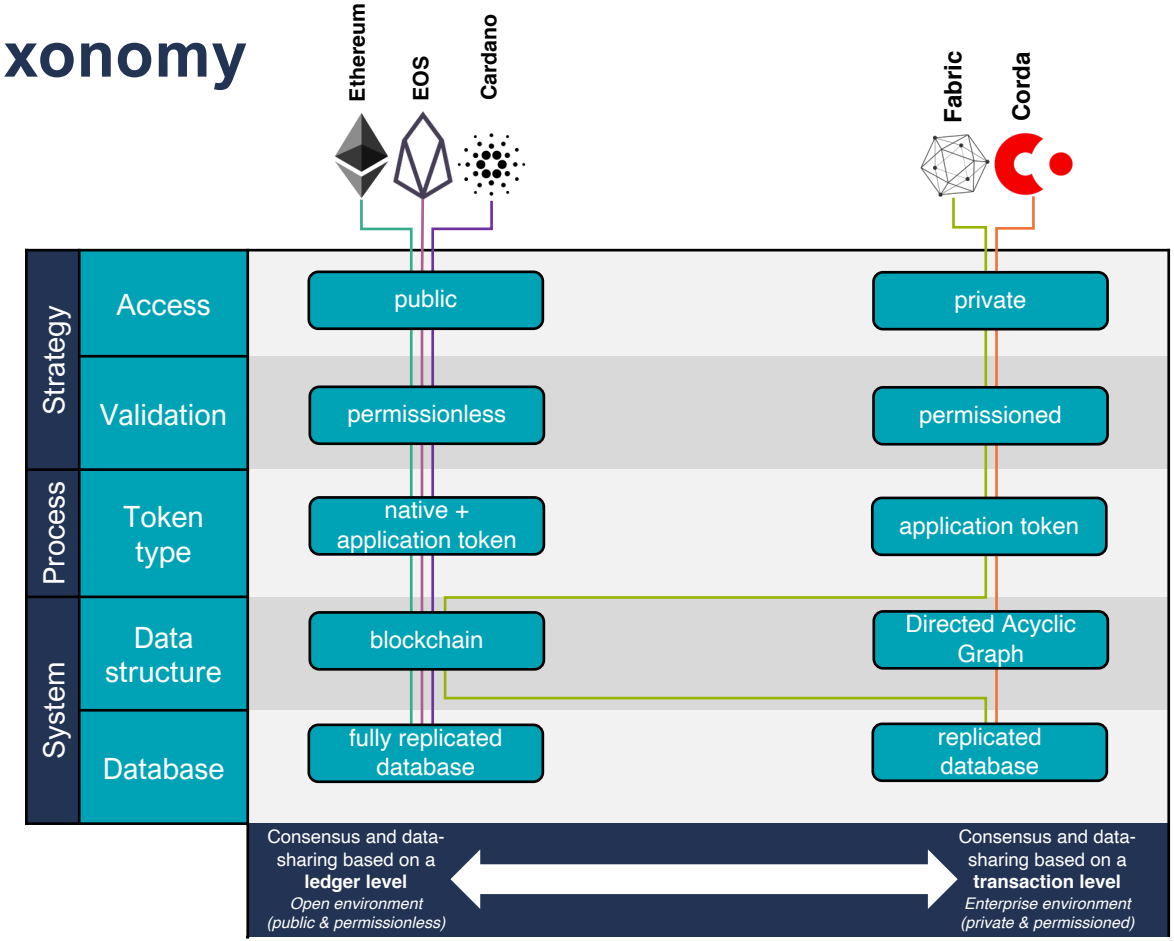
Blockchain in the Context of DLT



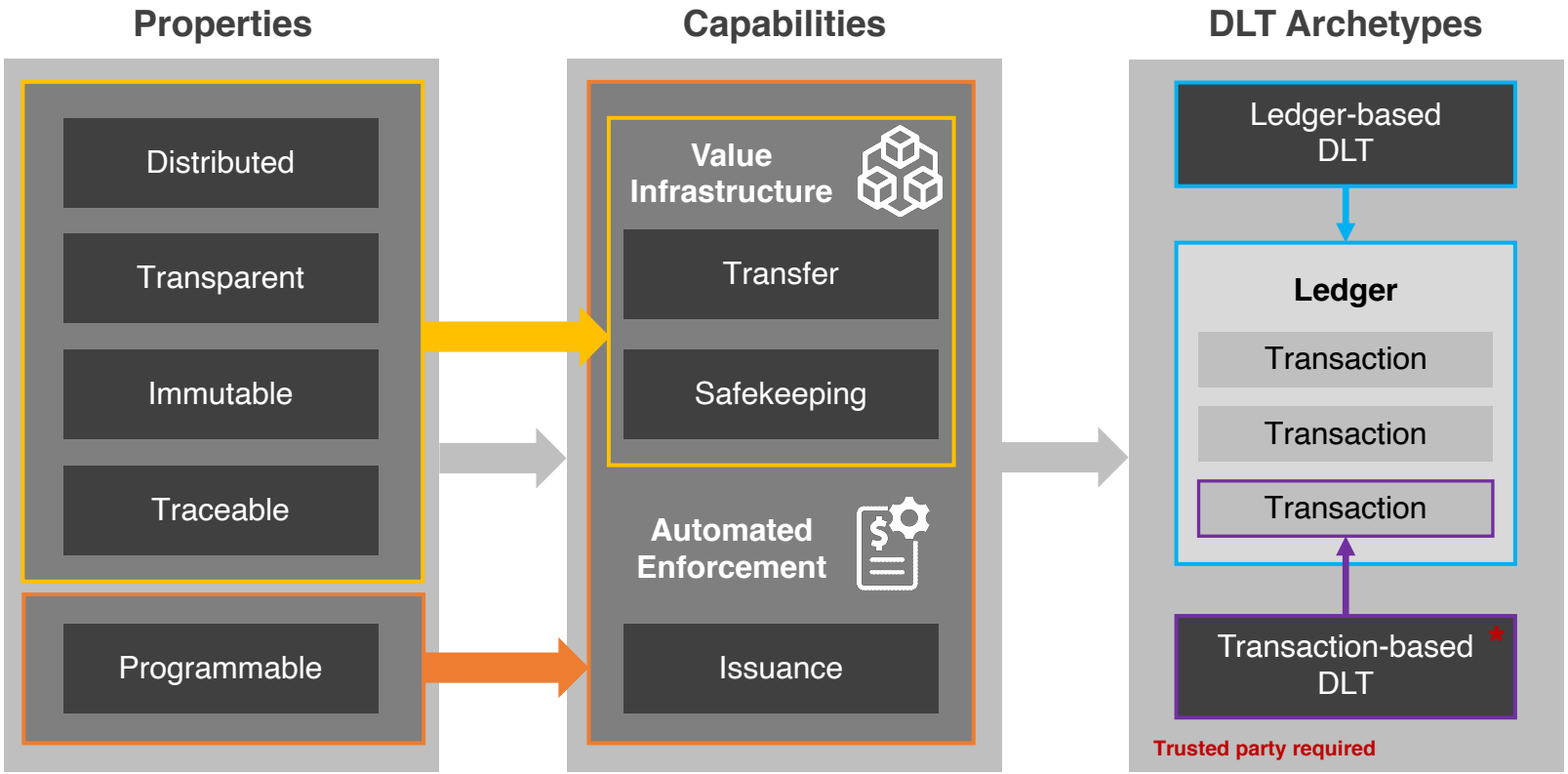
DLT Characteristics Derivation Process

	Specific properties	Source[1] I Total count	Properties
	Trust	[1-14], [16-65] I **(64)**	**Trusted**
User	Pseudonymity, Pseudo-anonymity	[1], [4], [11], [17-18], [21-22], [25-26], [32-33], [35-36], [39-40], [43-49], [56], [58], [65] I **(25)**	**Pseudonymous**
User	Anonymity	[8], [12], [16], [23], [30-31], [37], [41-42], [51], [55-57], [59,64] I **(19)**	
Transaction (consensus in regard to data)	Distributed	[1], [3], [6], [10-17], [19], [21-23], [25-28], [30-31], [33-41], [43-50], [52-54], [57-62], [64-65] I **(50)**	**Distributed**
Transaction (consensus in regard to data)	Decentral	[2], [4-5], [7-9], [18], [20], [24], [29], [32], [42], [55-56], [63] I **(14)**	
Transaction (consensus in regard to data)	Immutable, tamper resistant	[1-6], [8-13], [15-17], [19-32], [34], [36-65] I **(60)**	**Immutable**
Transaction (consensus in regard to data)	Integrity, consistency, authenticity	[3-5], [8], [11-13], [15-16], [20], [23-25], [27-29], [31-37], [39-40], [42-46], [48-52], [54-55], [57-60], [62-65] I **(45)**	
Transaction (consensus in regard to data)	Chronological, sequential, linked	[2-5], [8-9], [11-13], [16-18], [20-21], [23], [25], [27-33], [35], [37-55], [57-60], [62-65] I **(50)**	**Traceable**
Transaction (consensus in regard to data)	Transparent, visible	[1-2], [4-5], [8-13], [16-17], [19-29], [31-35], [37-39], [41-43], [45-51], [53-61], [63-65] I **(53)**	**Transparent**
Transaction (consensus in regard to data)	Programmable, contract code	[1-3], [5-6], [9], [11-17], [19-21], [22-27], [31-32], [34], [37-40], [51-59], [53], [55], [57-59], [62-65] I **(47)**	**Programmable**

DLT Taxonomy



Strategic Capabilities



A Universal Bank has 7 Main Capabilities

Basic

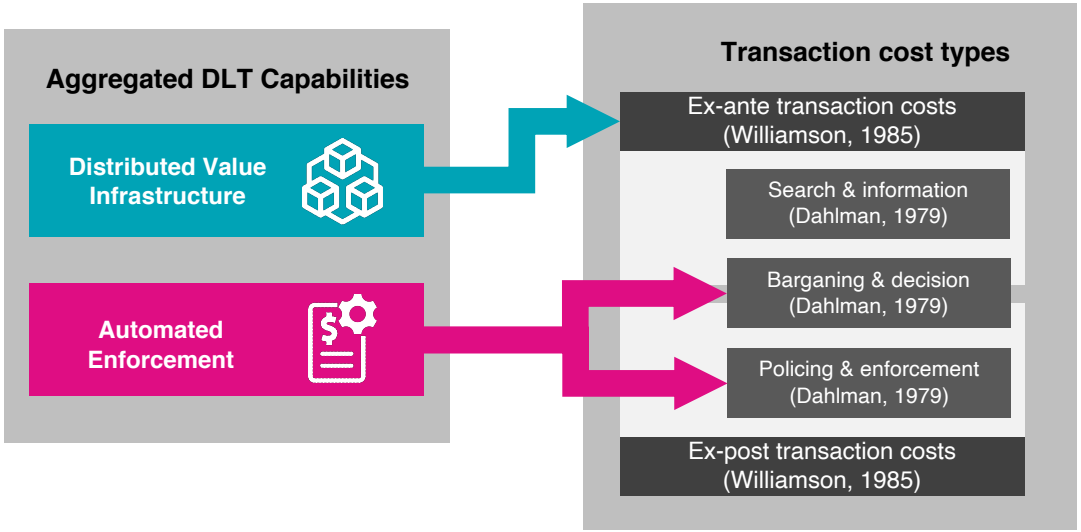
- Transfer
- Safekeeping
- Issuance
- Transport

Additive

- Advice
- Controlling
- Matching

- Value infrastructure capability
- Automated enforcement capability
- AI capabilities

Impact on the Process Layer

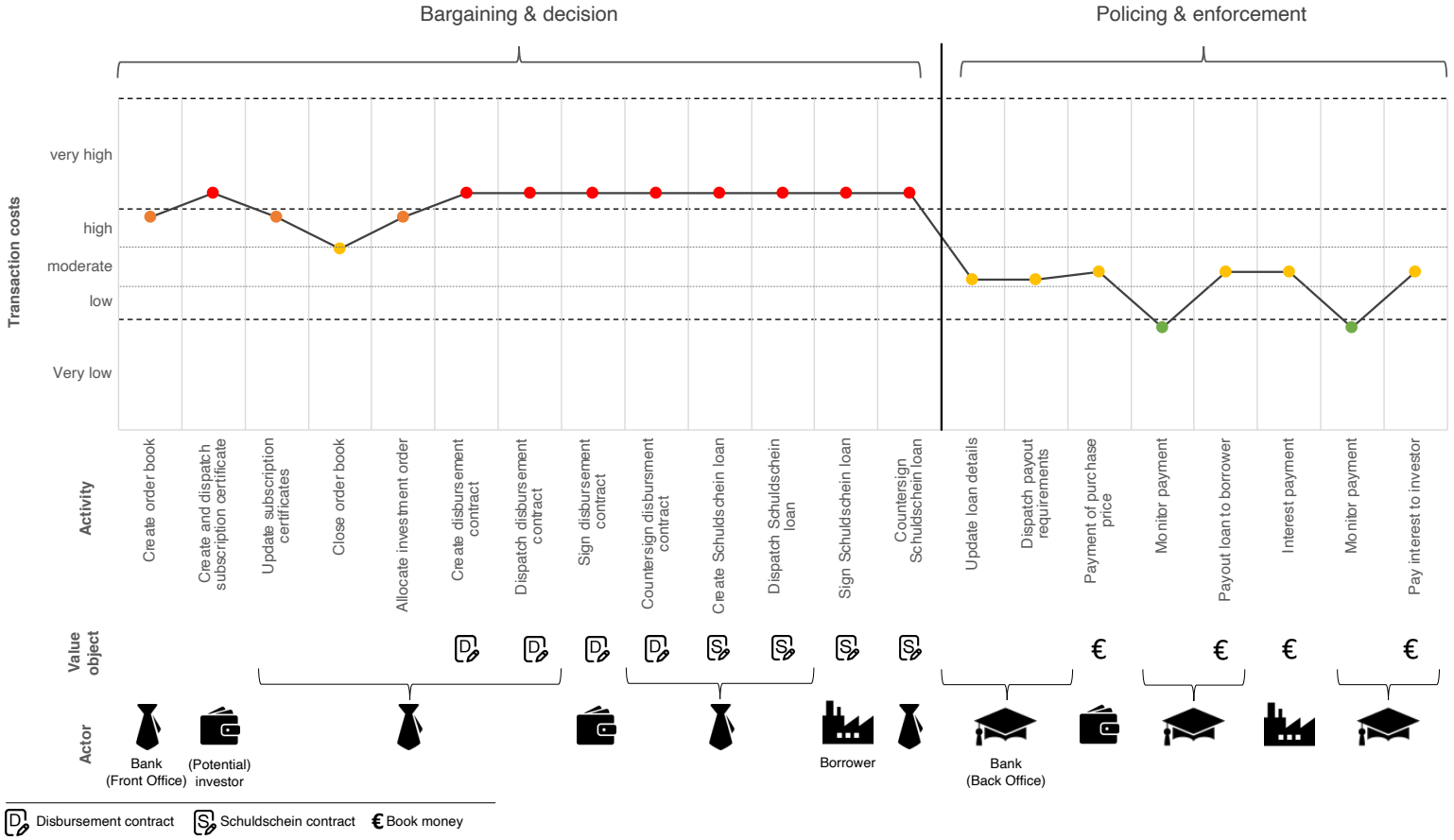


DLT Process Assessment Framework

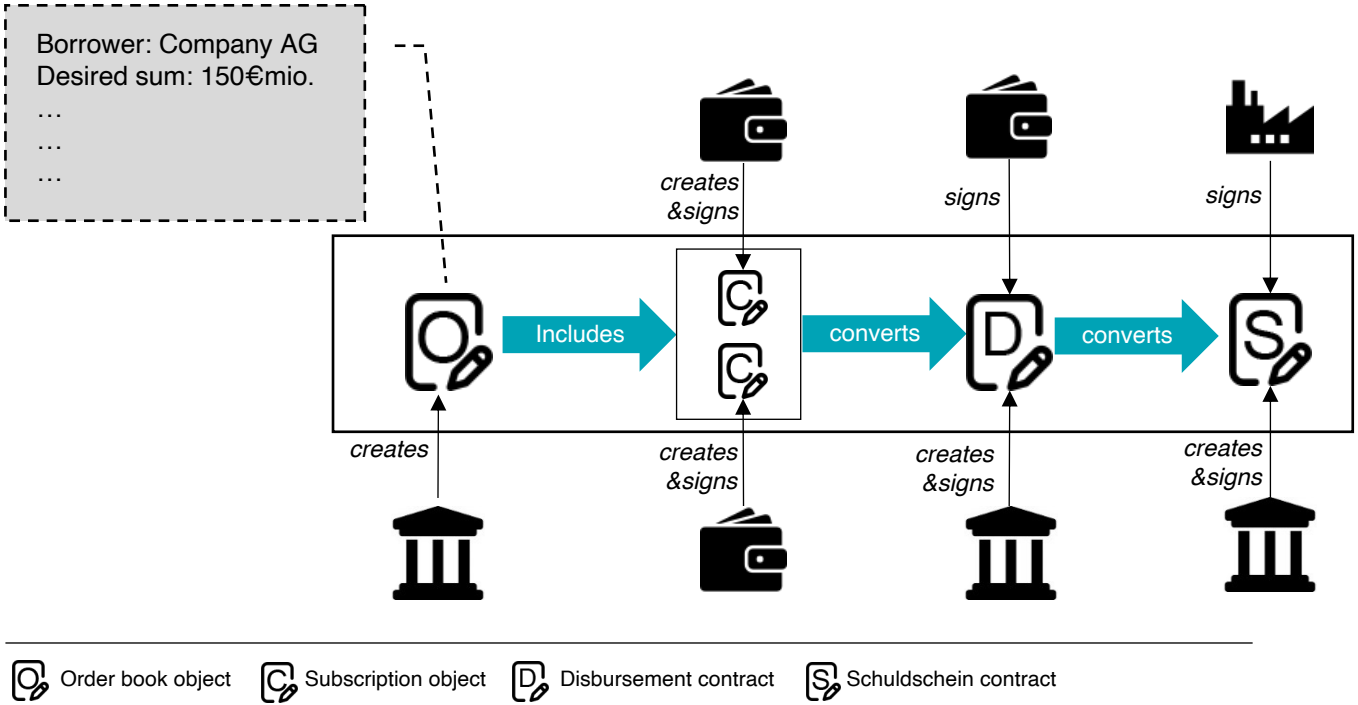
Transaction costs							DLT specific		DLT type specific	
Time	Costs	Quality	Type	Interaction	Automation	Media break	Different legal entities	Access and transfer to/of value	Sensitivity	Throughput
slow	high	low	analog	H2H	automated	Several media	no	no	yes	high
moderate	moderate	moderate	both	H2M	manual	One media type	yes	yes	no	low
fast	low	high	digital	M2M						
very fast	very low									

DLT Ledger- & transaction-based Transaction-based

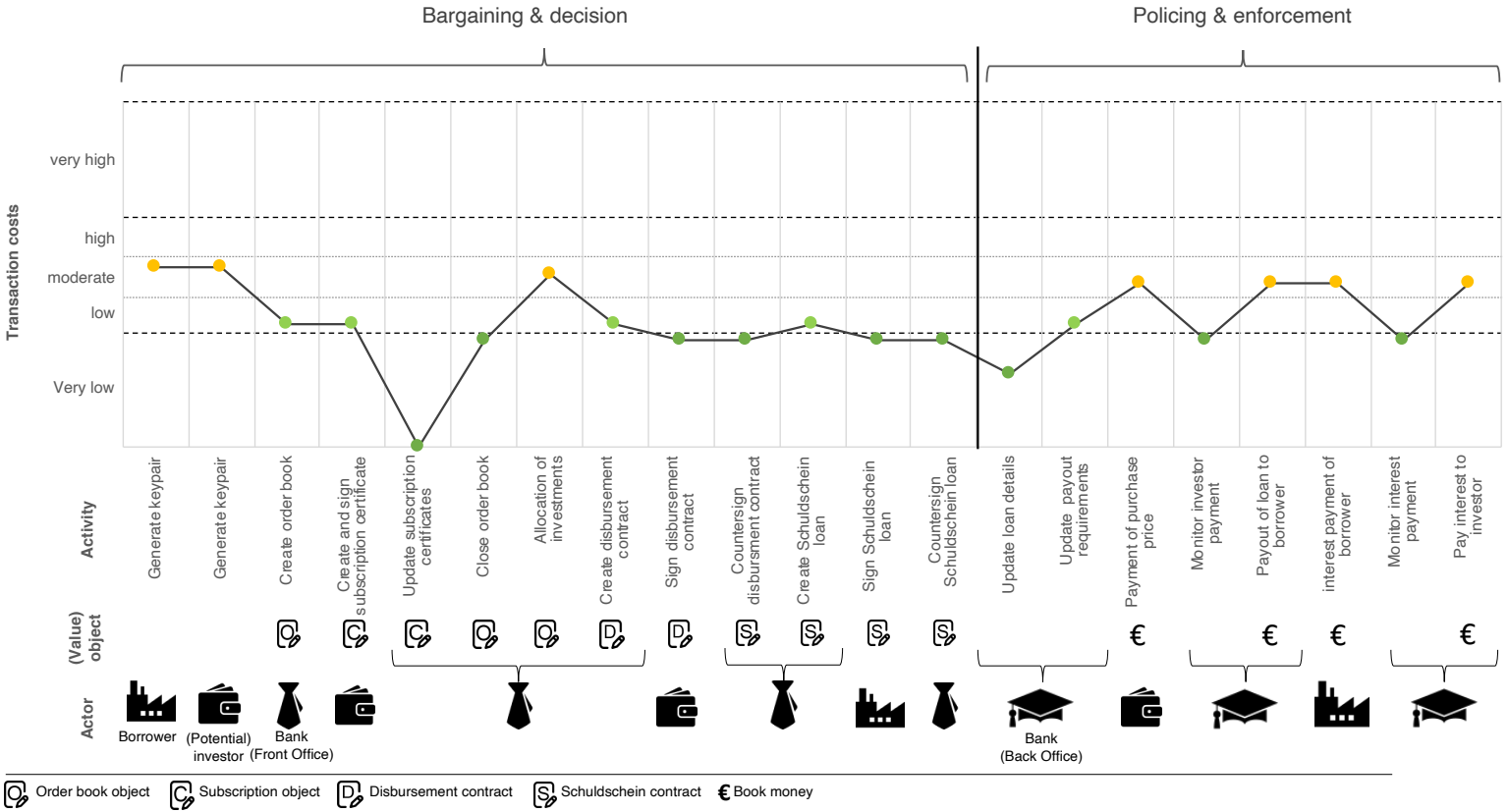
Old Process: Syndicate Loan Lifecycle



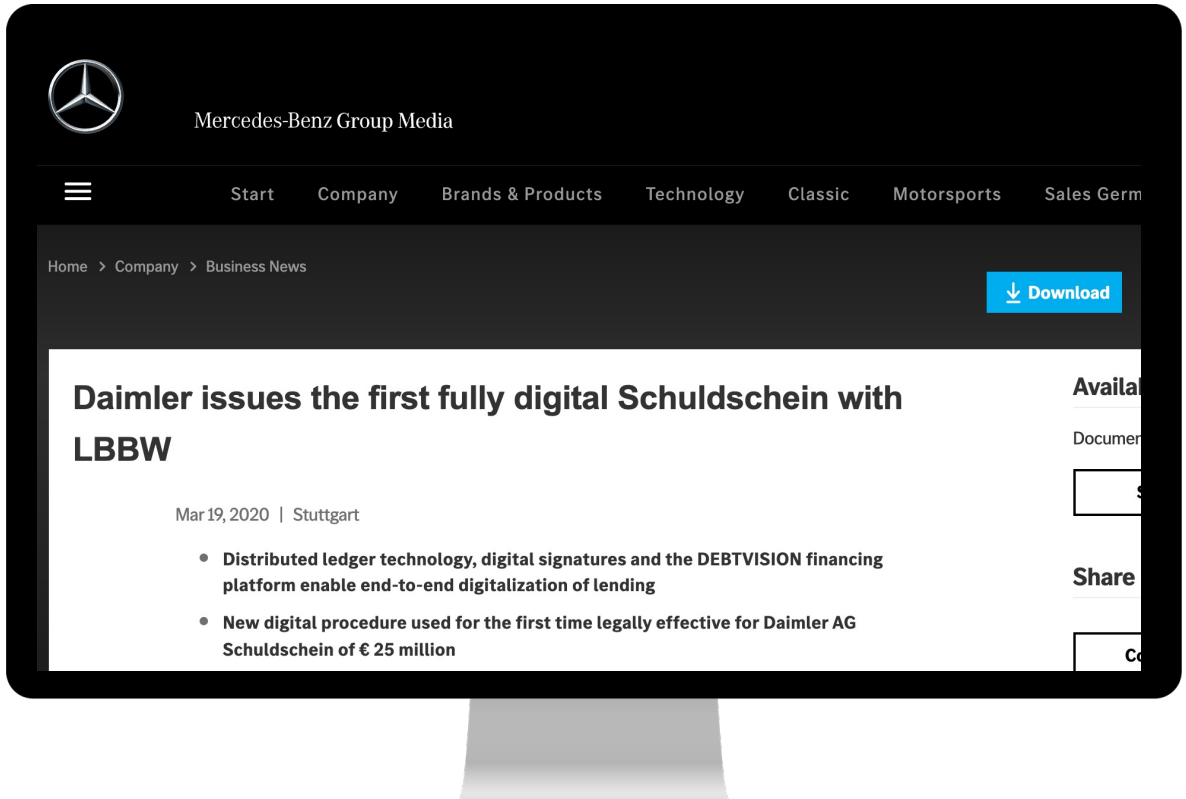
The Smart Contract Evolution



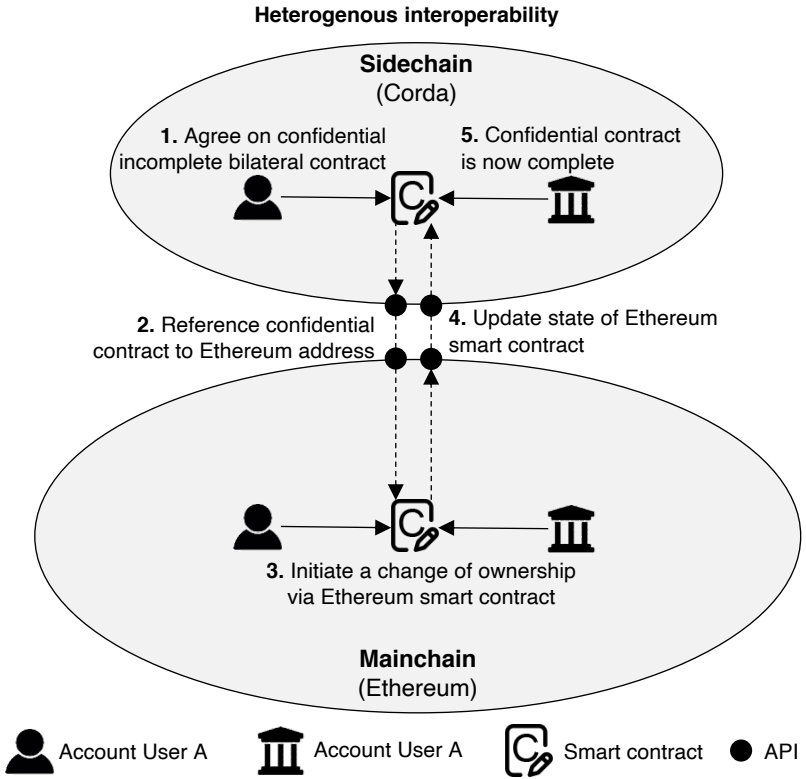
New Process: Syndicate Loan Lifecycle



From Academic Rigor to Practical Relevance



Impact on the System Layer – DLT Interoperability



Corda

```
var rpcEndpoint = "https://my.corda.node:10012/api/";
var stateUUID = "f81d4fae-7dec-11d0-a765-00a0c91e6bf6";

$.getJSON( rpcEndpoint + "contract/details/" + stateUUID, function( details ) {

    details.ethereumContract; // "0x091cc7F4ACA751a6f8A4101713d6B07CD4232341"

    details.masterData.Seller; // "Alice Green, 21 Evergreen Terrace, Springfield, CA 12345, USA"
    details.masterData.Buyer; // "Bob Black, Knockturn Alley 7, London, WC2N 5DU, UK"

    details.salesPrice; // $790000

});
```

Ethereum

```
var contract = web3.eth.contract(LandRegistryABI);

var address = "0x091cc7F4ACA751a6f8A4101713d6B07CD4232341";
var contractInstance = contract.at(address);

contractInstance.property(); // 0xc029296a45ff639ACee2547a38857E10F9d54979
contractInstance.owner(); // 0xc0ffee254729296a45a3885639AC7E10F9d54979
contractInstance.cordaContract() // "f81d4fae-7dec-11d0-a765-00a0c91e6bf6"
contractInstance.timestamp() // 1550659167
```

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Thank You!

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