



 26.10.20

 Osservatorio Blockchain & Distributed Ledger

Lo stato dell'arte della blockchain a livello internazionale

Progetto SCALES:

Supply Chain Architecture Leading to Enhanced Services



- **Blockchain & DLT: some definitions and features**
- Some evidences from the international market



Distributed Ledger Platforms

They are **distributed** structures of data, where it is only possible to add information (**append-only**) according to **shared rules**. **Cryptography and consensus algorithms** are used to reach consensus in the **absence of trust** and a **central authority**.

Distributed Ledger Permissioned Platforms

Distributed Ledger Platforms for which users **need to register and identify themselves** to receive authorization from a central entity or the network itself.

Distributed Ledger Permissionless Platforms (e.g. Blockchain)

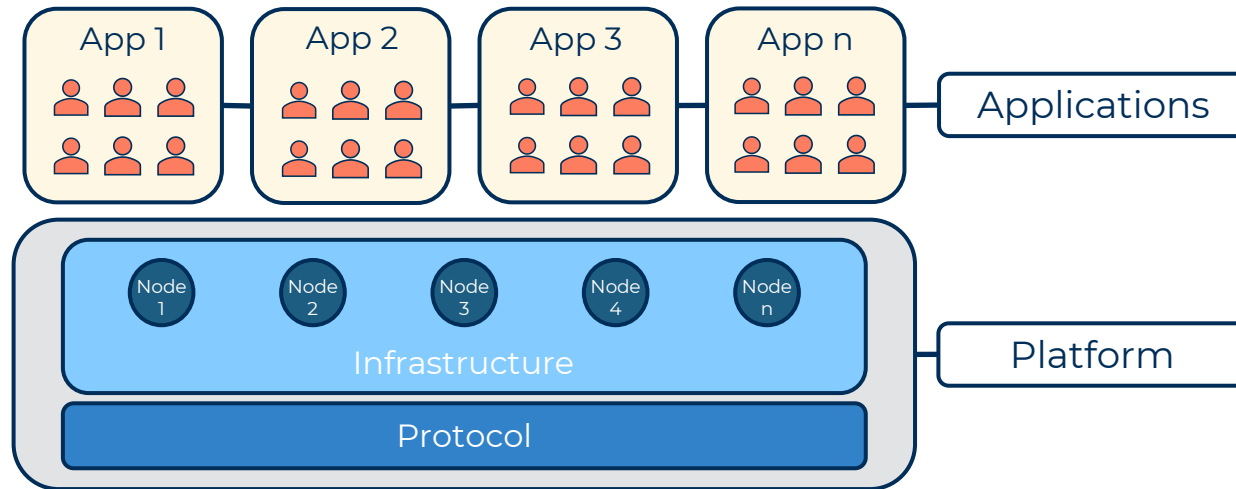
Distributed Ledger Platforms that **anyone can access**, without need for authorization, where the registry is **publicly available**. Unique digital assets are necessary to regulate the consensus mechanism and incentives system.

The Internet of Value includes every platform and Distributed Ledger application based on digital and trustless network of nodes and enabling the transfer of assets without a central authority.

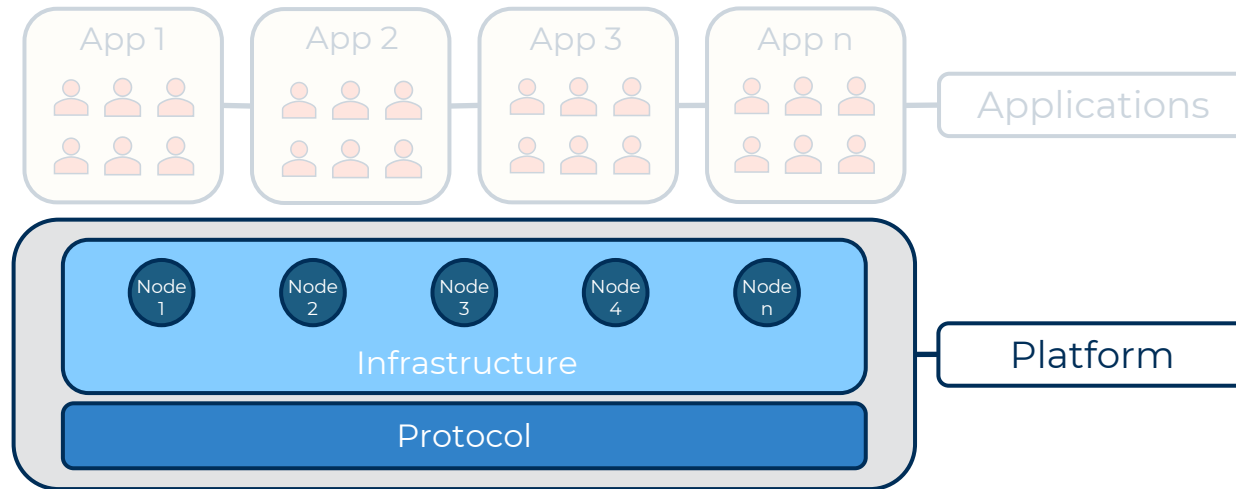
Applications

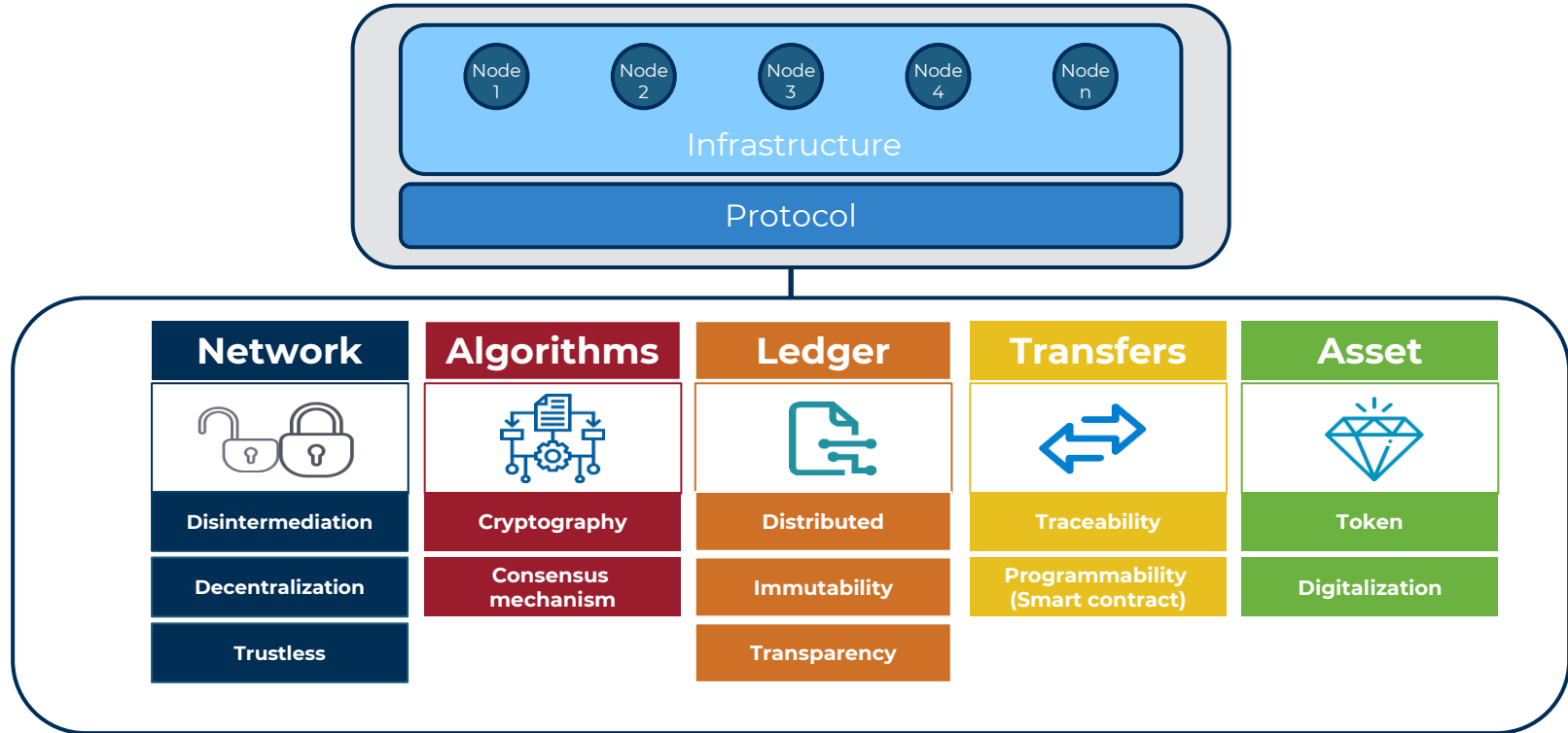
Value added services built on Distributed Ledger platforms, which uses some of their characteristics (e.g. programmability or immutability of information)







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		Validation process	
		Predefined user	Every user
Access to data	Predefined user	  HYPERLEDGER	...
	Every user	 	 



Companies and institutions are putting more effort in the creation of new Blockchain platforms instead of business applications

General purpose

Platforms created to enable the development of many different applications.



Permissionless ecosystems



Libra Association



European Blockchain
Service Infrastructure
(EBSI)

Application specific

Platforms focused on a single application.



“Traditional” companies
or industry consortia



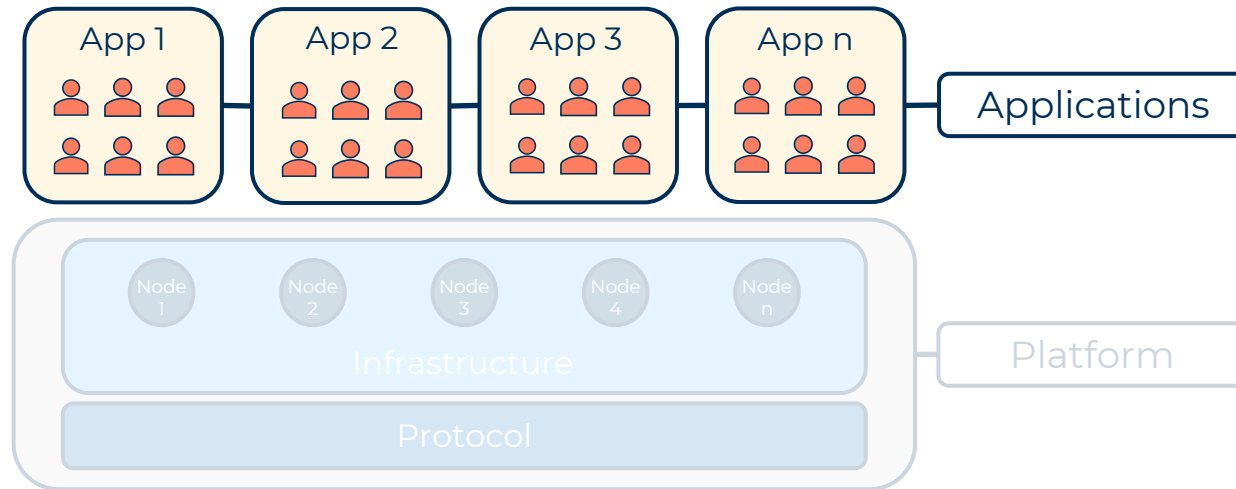
Public institutions

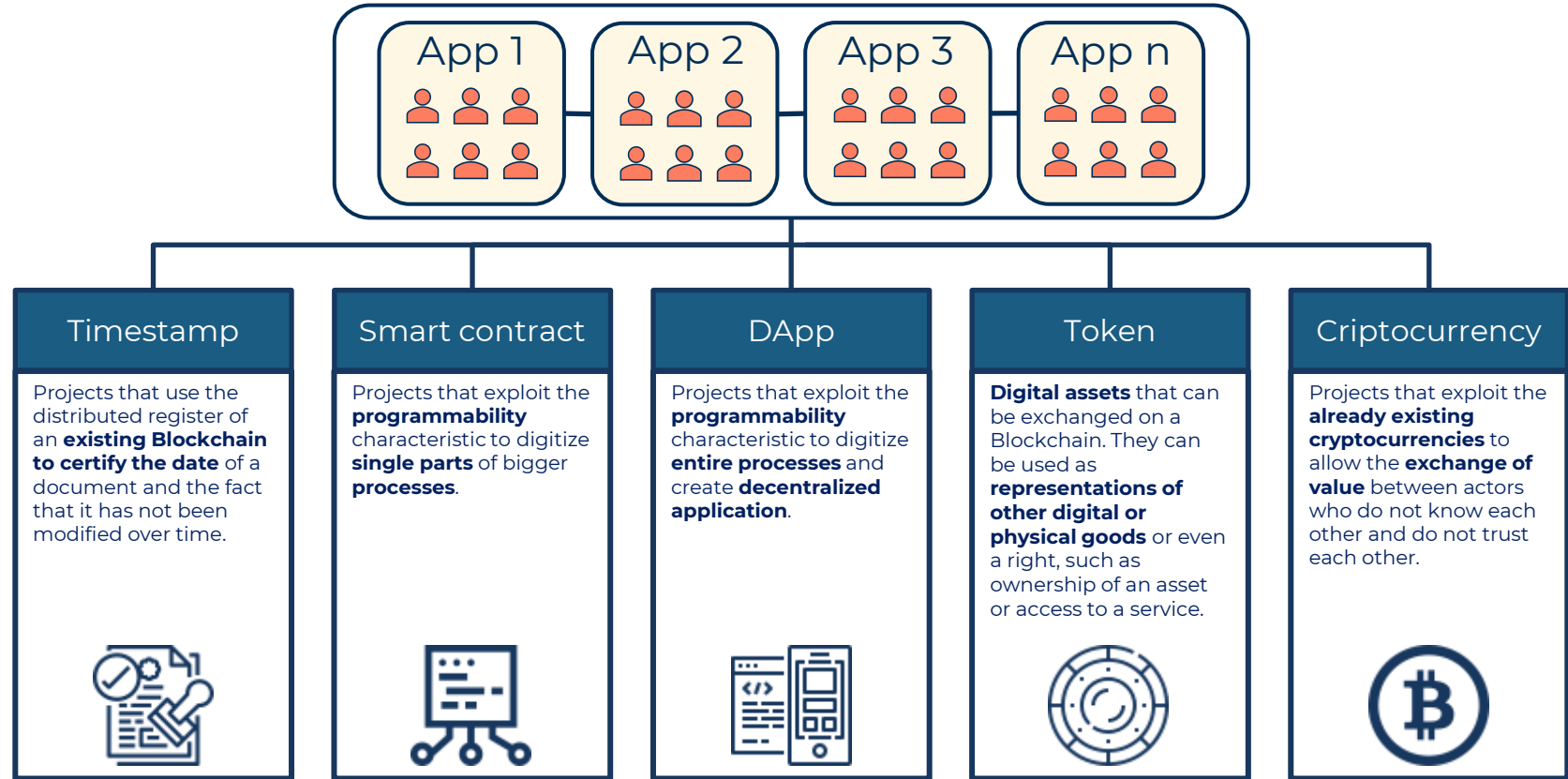


HM Land
Registry



The **Internet of Value** includes every platform and Distributed Ledger application based on digital and trustless network of nodes and enabling the transfer of assets without a central authority.





- Blockchain & DLT: some definitions and features

- 
- **Some evidences from the international market**



1.050
analyzed cases

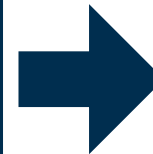


288
selected cases

- Scouting of use cases (both national and international) on several secondary sources
- The considered projects have been run from January 2016 to October 2019



- Analysis of the selected use cases run by the Blockchain & Distributed Ledger Observatory
- Some environmental, technological and actor-related variables are investigated



- Subselection of those cases related to the B2B and Supply Chain (SC) field, in which an information exchange between two or more subjects is involved
- SC-related variables are detected

288 case histories

analyzed by looking at the following macrovariables

- Geographic distribution
- Area of interest



Stakeholder-related

- Type of network
- Protocol
- Type of application

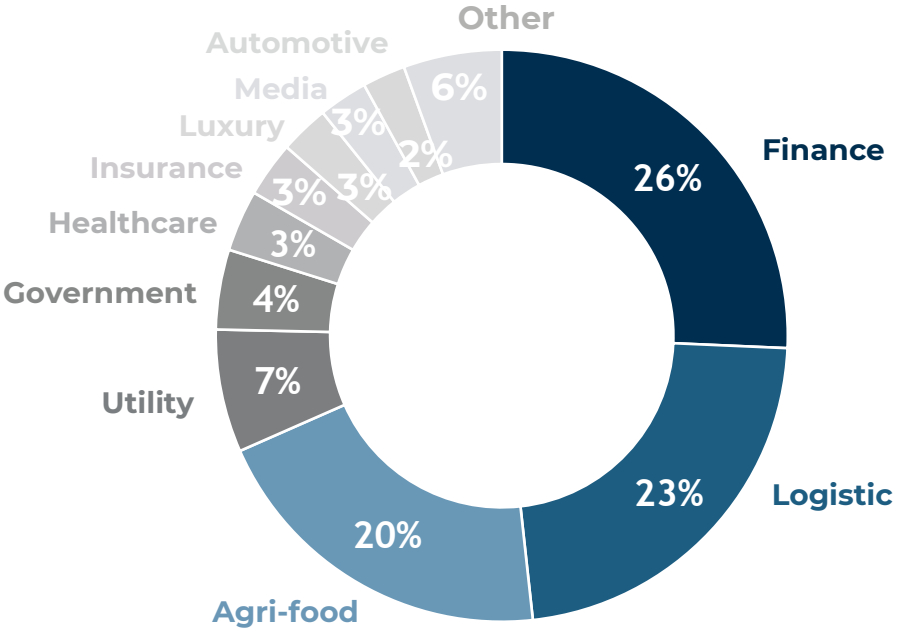


Technology-based

- State and date of announcing
- Process of implementation
- Expected benefits



Project-related



- The **finance sector** is the first one in importance, by covering the **26% of the considered SC cases**.
- Projects in **logistics and agri-food** are relevant too: this fact represents a **countertrend with respect to the total cases**, where they count together just for 13%.
- The role of **government is smaller than the total census** (10%).

Base: 288 cases



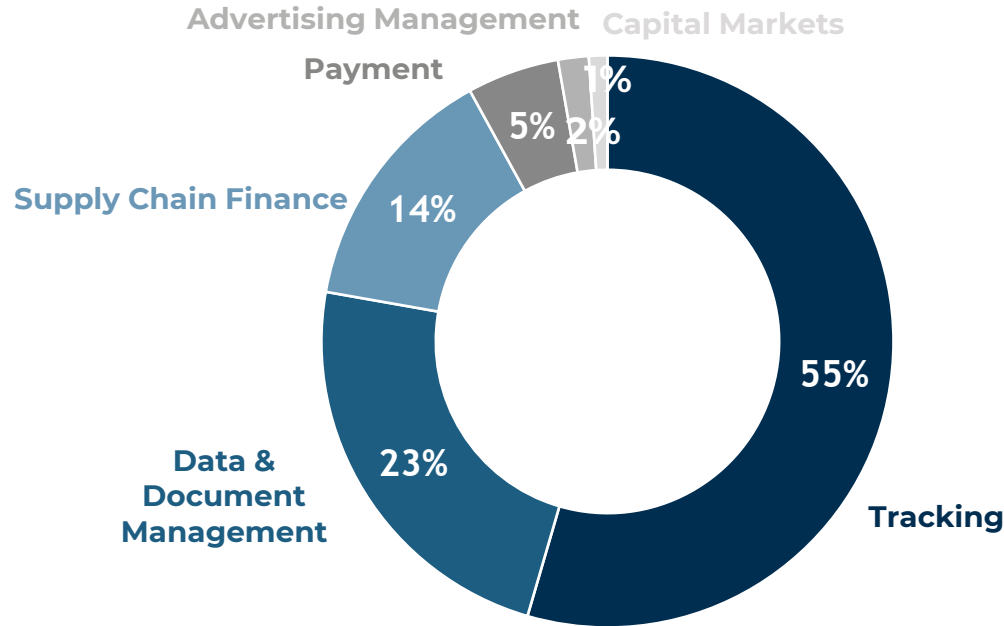
Stakeholder-related



Technology-based



Project-related



- **Tracking represents the most important process** where the Blockchain technology has been applied.
- In **Data & Document Management** most cases are aimed at **digitizing trade documents**.
- In **Supply Chain Finance** Blockchain is used to **store, certify and share documents with financial institutes** in a safer and more efficient way.

Base: 288 cases



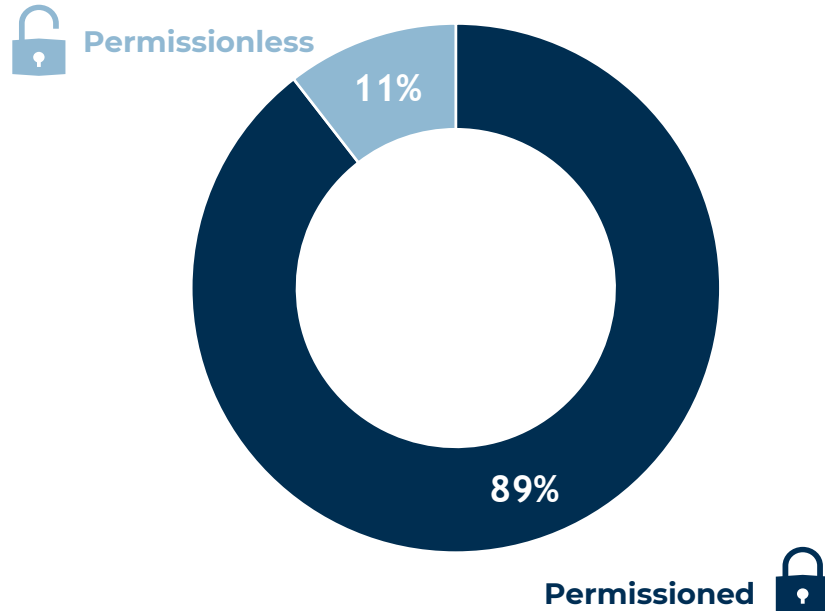
Stakeholder-related



Technology-based



Project-related



Base: 219 cases

- The **prevalence of permissioned platforms** is coherent with the results we get by analyzing projects in other sectors.
- The **efficiency of permissioned Blockchains** along with the fact that **the permissionless platforms are still evolving** explains this result.
- **Permissionless platforms** are mainly used in those cases in which **a simple timestamp** of data and documents is needed.



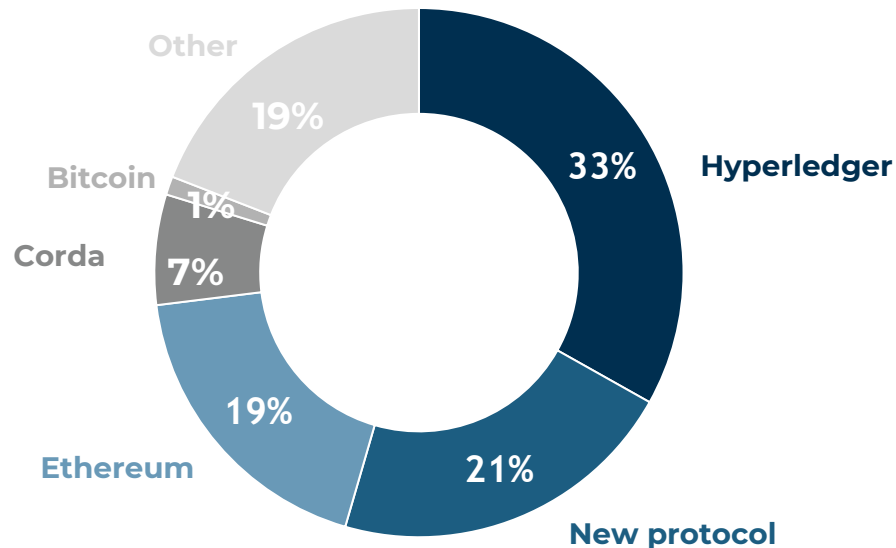
Stakeholder-related



Technology-based



Project-related



- Most of the cases (59%) rely on **existing protocols**, such as Hyperledger, Ethereum and Corda.
- The advantages of choosing an existing protocol are: **interoperability, standardization** and chance of involving a **big number of actors and developers**.
- On the other hand, one fifth of the projects develop a **new protocol** in order to maximize the **personalization of the platform**.

Base: 178 cases



Stakeholder-related




Technology-based



Project-related



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