FACT SHEET

DISTRIBUTED LEDGER TECHNOLOGIES

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TRUE SEGREGATION OF DUTIES

The Essence: A database that is shared, replicated, and synchronized among members of a decentralized network.

Characteristics: DLT are better known as "Blockchain" in daily speech. However, DLT are more generic as "Blockchain" prescribes data stored in blocks, which is not necessarily the case with all DLT. DLT are described as *distributed data and transaction records* in a decentralized network which are managed *without any central authority* or third-party mediator present. There exist both *public and private networks*. Any change in ledger records must be agreed by network member *consensus*, and each change constitutes another *encryption* layer to the existing records. Every record has a *timestamp* and unique *cryptographic signature*, making the ledger an *auditable*, *immutable history* of all transactions in the network. Attempted fraud will reveal compromised transaction inputs, detected through unauthorized changes in *cryptographic hashes*, and *digital signatures* ensures *non-repudiation*. *Tokens* held by data and asset owners represent their ownership and does not need to be monetized as cryptocurrency – but it is a common modality. Several different DLT exist: Bitcoin, Hashgraph, Etherum, Directed Acyclic Graphs (DAG) and EOS – which is a frontrunner in terms of transaction speed, open source and low cost.

Business value: DLT has great potential both in terms of commercial interest, but additionally as a mean to solve fundamental global issues. These technologies do suffer from a lack of awareness and knowledge still, however more and more organizations are seeing the value they can bring. Possibilities are endless, with considerable cost savings and improved security as perhaps the most immediate appeal for many organizations.

Concerns: The thought of distributing data and assets in a decentralized network does not appeal to some, even if the privacy and security in most cases will improve over traditional centralized databases. Also, the association with cryptocurrencies is a widespread concern.

Successful implementations: DLT are used for both commercial and non-commercial purposes. Examples are ship container tracking, inter-organization data storage, document authentication proofing, distribution of humanitarian aid, IoT data collection, etc.

Hot tip: DLT do require proper evaluation, design, implementation, and service maintenance. Ensure you have the right expertise onboard from strategic evaluation, through planning and technical hands-on resources!

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