The ledger as a shared record

Dr Alexander Ressos, TEP
Attorney-at-Law (Switzerland and Germany),
Solicitor (England & Wales and Hong Kong)
Of Counsel, KGP Legal LLC
alexander.ressos@kgplegal.com.sg
www.ressos.com.sg

A distributed ledger is a database that many independent computers hold in identical copies and update by agreement. Nothing in that description is new. Banks have reconciled accounts for centuries, and a clearing house is nothing other than a trusted party that keeps the master copy. What changed in 2009 with the Bitcoin network was that the master copy disappeared. No participant has the authoritative version. Instead the participants run a protocol that lets them agree on a single history of transactions although none of them trusts any other. That protocol is called consensus.

The legal consequence is immediate. If no participant has the authoritative copy, no participant is the "register keeper" in the sense that the Swiss Code of Obligations (CO; OR) or the Singapore Companies Act 1967 would normally assume. Swiss law met this problem when it drafted the ledger-based securities provisions of Art. 973d ff. CO in 2020 and chose to regulate the properties the ledger must have, instead of naming an operator who must keep it.[1] The functional approach survives throughout the Swiss statute. It is useful to keep in mind that the drafters wrote for a technology they expected to change.

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Singapore took a different route. The Payment Services Act 2019 defines a digital payment token by what it is used for and how it is held, without any requirement that the ledger be decentralised at all.[2] The result is that a token on a wholly centralised database run by one company can be a DPT in Singapore, whereas Swiss law would treat such a token as an ordinary book entry if it fails the Art. 973d functional tests. The reader who structures a group with entities in both hubs will meet this divergence repeatedly.

Notes

1. Code of Obligations, SR 220, Art. 973d para. 2 nos 1–4, as inserted by the Federal Act on the Adaptation of Federal Law to Developments in Distributed Ledger Technology of 25 September 2020, AS 2021 33, in force 1 February 2021. ↩
2. Payment Services Act 2019 (Singapore), s. 2(1), definition of "digital payment token" (a digital representation of value expressed as a unit, which is denominated in no currency, is intended to be a medium of exchange and can be transferred, stored or traded electronically). ↩

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Author contact: Dr Alexander Ressos, TEP · contact@ressos.com

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