**Block Chain Technology and Risk Management**

# Just Another Tech Hype ?

*It sounds a bit like somebody "almost found" the Holy Grail once again: From everywhere we hear the word "Block Chain" and how terribly great that would be. When looking for explanations, these mostly refer just to the new crypto currencies. But hardly anyone has day-to-day experience with that crypto stuff and so the evil prejudice awakes: "...it's just someone else who is keen on my money!"*

## From the term to the principle

A bicycle chain from block links would be rather misleading, therefore we start from a conventional classic linear chain and chain links. And such a chain is known to be only as strong as its weakest link. Once the fateful one breaks, the entire chain is scrap. But now imagine a hollow cuboid jam-packed with chain links. However, the chain links in there are not just connected in one direction (as in the classical chain) but each one linked into all possible directions – together they make up a solid "block". If one is pulling on a chain link of this block, this interwoven entity is considerably more resistant. Even if two or three links break, that can't destroy the integrity of the entire intertwined block!

Let's stay with classic chains for a moment. (and with classic money - everyone understands that!) Your relationship with your local bank corresponds to the classic chain: Two ends – one direction. If somebody overcomes your bank's safety functions, they can "rewrite" foreign property (e.g. yours) into their own by changing the bank's general ledger records in his favor. The general ledger exists only once (perhaps with a few backup copies), but whoever takes power over the central functions owns the central power over the truth of all data.

> **"Every chain is as strong as it's weakest link!**

Contrary to the local bank, we now imagine a network of relationships in which all participants take on both roles: being recipients and also being providers, each with everyone. That's the case e.g. for rooftop solar energy system operators who feed their surplus electricity into the grid. Sometimes the own facility produces more than one consumes, sometimes less. Sometimes they earn money with fed-in electricity, sometimes they need a bit more and have to pay.

Now imagine that every single participant in this group of would have as part of their setup a copy of the "cash book" of the entire(!) community, recording each and every(!!) transaction of all participants, a kind of a book of trust.

And each copy could permanently compare with all (!!!) other copies. So each participant can confirm at any time whether a transaction is legitimate or not and whether all account balances overall are true. It's just like in a market place, where all attendees notice every deal and each participant records all transactions, own and also foreign ones. In this way, it is not even necessary to know all the participants personally - an anonymized, clear identification is fully sufficient for that purpose. That's the very simplified basic principle of Block Chain Technology.

But our Block Chain is fully electronic. So what, if someone rewrites a "cash book" in his favor? What if a number of cash books were temporarily offline for technical reasons? Then there would still be many others who would write simultaneously what had happened in the meantime. More than half of all local "cash books" in the community would have to be successfully attacked and changed at same time (without any in the community members noticing), in order to overcome that decentralized system. Technology experts are convinced: That would only be possible today with a gigantic computing power that no one alone has - at most a few really big, interconnected state players.

## The future will show

From a Risk Management Perspective the Block Chain principle is highly interesting. Imaginable applications are abundant not only in the financial sector, e.g. in distribution networks for efficient identification and exclusion of counterfeit products. Or granting full transparency of global transport chains with multiple players involved. The Block Chain will have to proof that the principle is and remains that safe. For this purpose, three Credible-Worst-Case Scenarios can be proposed for examination: 1st "Taking over >51% of a Block Chain using worms, computer viruses, bot networks, etc.", or 2nd "Collapse of the Block Chain function due to persistent, severe failures of global electronic networks" and 3rd, "system failure through punctually incipient and cascading further propagated disturbances".

Crypto currencies should be worth our continuous and attentive observation, but not just for financial reasons. There, an exemplary decision is made as to whether Block Chain Technology can play it's prophesied future role.

*Do you agree with this explanation? Do you have an even better one, or do you come to other conclusions? Do you know other possible use cases? Please get in touch under subject "Risk and Block Chain". GLORISOL® supports organizations in Strategic Risk Management, shaping of supply chains, supplier management as well as in global procurement.*