

## **Abstract**

**Titel: Smart Contracts on Distributed Ledger Technology and its applications in small banking sector**

### **Kurzzusammenfassung:**

Smart contracts, enabled by blockchain or distributed ledgers technology (DLT), have been held up as a cure for many of the problems associated with traditional financial contracts, settlement or intermediaries, which are simply not geared up for the digital age.

But small banks like VP Bank are not involved in this effort nor analysed the impact of such technologies on their banking processes. This work will try to assess the necessity and the impact of using DLT along the bank system Avaloq. The paper also presents the theoretical background of blockchain and in the end practical recommendation for small banks.

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## **Ausgangslage**

DLT is at the centre of a massive push for innovation across the financial services industry. The potential of smart contracts – programmable contracts that automatically execute when predefined conditions are met – is the subject of much debate and discussion in the financial services industry

While DLT is by no means a onsize-fits-all solution, it has the potential to drastically alter the way we do business and interact with one another. The technology is also known as the “Internet of Value”, as it increases the efficiency, security and transparency of transactional activities.

## **Ziel**

The purpose of this paper is to answer some questions about the possibility and impact of implementing a blockchain based solution in a small to medium bank like VP Bank AG. The questions are listed below:

- What exactly is a distributed ledger?
- Which are the trends in using smart contracts for areas like payments, corporate actions and lending?
- Which are the challenges for implementing smart contracts in these areas?
- How the smart contract work?
- Do small banks like VP Bank need to explore these areas or should wait and buy from a third party?
- How could a DLT solution be integrated within VP Bank core banking system?
- What would be a concrete business case?
- What a technical solution should include?
- What are the costs to implement an integrated DLT client in Avaloq (core banking system for VP Bank AG)?

## **Vorgehen**

Firstly, based on the available literature, I analysed the technical background of different implementations of blockchains highlighting their advantages and disadvantages. Using the results of existent studies made by prominent financial actors like central banks I identified the most promising use cases for small banks. For one of them, settlements, I set up a proof of concept to test the possibility and the impact of integrating a distributed ledger with standard banking software.

## Erkenntnisse

Even if the technical solution can be implemented efficiently by the VP Bank AG itself, the entire DLT system can work only if there are more participant banks including national entities like central banks.

There are some questions which remain open and were beyond the scope of this paper: the impact on VP Bank organisation and the impact of current legal framework. Since this is a completely new area, laws regulating use of blockchain in finance might not be established yet. In a multijurisdictional environment it is important to have a clearly established, sound, and enforceable legal basis for its activities. Since this technology can be used across borders it becomes even more complicated.

In order to be prepared for the impact of these blockchain technologies, banks like VP Bank AG should acquire knowledge about DLTs, experiment with DLTs, collaborate with other banks, startups, regulators and standardizing institutions as World Wide Web Consortium and work towards a profitable business cases. Also, they should empower an internal and external attitude change towards the blockchain, devoting resources to the compatibility, relative advantage and complexity of DLTs.

## Literaturquellen

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