

# URR Blockchain and Distributed Ledger Technology (DLT): The Future of Accounting

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## Abstract

In recent days the blockchain technology is considered the most significant invention after the Internet. Blockchain technology brings in yet another revelation, this time in accounting principles. Blockchain and Distributed Ledger Technology in the field of accounting will ensure the quality, transparency, efficiency and safety of accounting and control and management processes at the enterprise. In this paper, we provide the Origins of ledgers, Problems with current ledgers, an overview of the Distributed Ledger Technology (DLT), and Types of Distributed Ledger Technologies. We also present an Importance of Distributed Ledger Technology, Challenges and risks related to DLT systems, and the future role for Distributed Ledger Technology.

## Keywords

Distributed Ledger Technology, Blockchain, Bitcoin, Decentralized, Accounting, Ledger, crypto-currencies

## Introduction

Just a few years ago, the majority of the people in the world used to know that it is the only application of BCT. However, today the world knows the disruption this technology has brought everywhere. This technology is revolutionizing almost every industry. (Laroiya et al, 2020) Blockchains are the basis for a popular phenomenon of crypto-currencies, the most famous of which is Bitcoin (Macaulay, T, 2016) Blockchain, the technology behind digital currency, is a decentralized, distributed ledger that records transactions in digital assets (George, and Patatoukas, 2020) and Blockchain, as a decentralized ledger technology with characteristics of transparent, secure, permanent and immutable, has been applied in many fields such as cryptocurrency, equity financing and corporate governance (Yu, T. et al, 2019) Blockchain technology is a structure that stores transactional records, also known as the block, of the public in several databases, known as the "chain," in a network connected through peer-to-peer nodes. Typically, this storage is referred to as a 'digital ledger.' (Simplilearn, 2020) Blockchain technology has garnered the interest of the accounting profession in recent years (Vincent et al, 2020)

## Origins of Ledgers

The first recorded ledgers were found in the city of Mesopotamia, today's Iraq, around 7000 years ago. Clay tablets were used to record lists of expenditures and goods received and traded. At the time, the ledgers of Mesopotamia were safe-kept in temples that were considered the banks of the time (M. Fand Frydel, M, 2018) Next came the development of the double-entry bookkeeping system, pioneered by Jewish bankers in the early-medieval Middle East and adopted by Italian merchants and money-lenders by way of trade interactions, the oldest record of its use in Northern Italy being the accounts of the Republic of Genoa, in 1340. Luca Pacioli was the first to document double-entry bookkeeping in a book everything About Arithmetic, Geometry and Proportion, published in 1494 (Steemit, 2019)

Now, 21st century technology has enabled the next step in record-keeping with cryptography, advanced algorithms, stronger compute power and near-ubiquitous computational power, making the distributed ledger an increasingly viable form of record-keeping (Troy, S., and Pratt, M. K, 2017)

## Problems with Current Ledgers

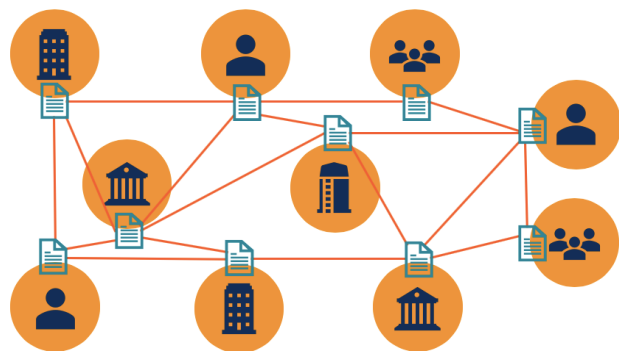
Current business ledgers in use today are deficient in many ways. They are inefficient, costly, and subject to misuse and tampering. Lack of transparency, as well as susceptibility to corruption and fraud, lead to disputes. Having to resolve disputes and possibly reverse transactions or provide insurance for transactions is costly. These risks and uncertainties contribute to missed business opportunities (IBM, 2021)

## Introduction to Distributed Ledger Technology (DLT)

A distributed ledger (also called a shared ledger or distributed ledger technology or DLT) is a consensus of replicated, shared, and synchronized digital data geographically spread across multiple sites, countries, or institutions (Assets publishing, 2015) and Blockchain is also known as distributed ledger technology (DLT), a digital system that records asset transactions and their details in multiple locations simultaneously. Blockchains are building blocks of interactions and transfers. These blocks can be assets of any digital kind, for example, money, securities, land titles, information on identity, health and other personal data.

Distributed Ledger Technology (DLT) could fundamentally change the financial sector, making it more efficient, resilient and reliable. (World Bank, 2018) the adoption of a Distributed Ledger Accounting presents extremely interesting characteristics, eliminating or redefining the role of entities external to the company, such as Banks, Insurance Companies, Certified Public Accountants and Auditors. (Inghirami I.E, 2020) The Internet of Value based on Distributed Ledger Technology strives for a strictly decentralized organization of interactivities between peers without any centralized platform or intermediary. (Lenz, R, 2019)

Blockchain, whether public or private, is a distributed ledger with the capability of maintaining the integrity of transactions by decentralizing the ledger among participating users (Atlam, H. F., and Wills, G. B., 2020). Each transaction is confirmed by the consensus of a majority of the members, making fraudulent transactions unable to pass collective confirmation. Once a record is created and accepted by the blockchain, it can never be altered or disappear (Efanov, D. and Roschin, P., 2018).



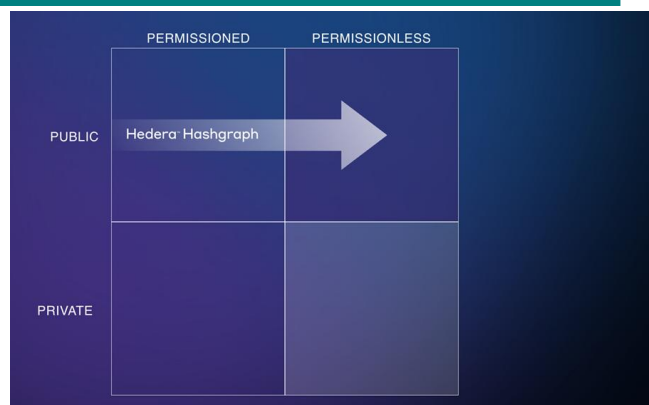
**Fig .1. Distributed Ledger Technology (DLT)**

Source: <https://corporatefinanceinstitute.com>

Distributed Ledger Technology, or DLT, is a category of database technology that includes blockchain technology or characteristics of a blockchain. But not every blockchain is a distributed ledger (Dragonchain, 2019). Distributed ledger technologies allow businesses and individuals alike to quickly carry out secure transactions without needing to rely on a middleman. By avoiding intermediaries, distributing control of the ledger, and providing a tamper-apparent network, DLTs present a more cost-efficient, accessible, and reliable transaction platform than centralized ledger systems (Hedera, 2018). Distributed ledger technology (DLT) revolves around an encoded and distributed database serving as a ledger whereby records regarding transactions are stored. At the core DLT is an innovative database approach with a data model whereby cryptography is utilized in each transaction update and verification becomes possible across the specific blockchain network, depending on its goal and stakeholders (i-scoop).

### Types of Distributed Ledger Technologies

There are two distinct types of distributed ledgers and blockchains: permissioned (private) and permissionless (public). In essence, this determines who can participate in validating transactions on the network. In a permissionless distributed ledger, anyone can join the network without needing to be approved by anyone, like in the case of Bitcoin or Litecoin. A permissioned ledger requires participants to be approved before they can be part of the network, for example Facebook's Diem stable coin project (formerly known as Libra) (Coinmarketcap, 2020). Distributed ledgers are categorized as "private" or "public" and "permissioned" or "permissionless" — they can be any combination of any of the two. To achieve full decentralization, Hedera believes distributed ledgers must be public permissionless networks (Hedera, 2018).



**Fig.2. Public vs. Private and Permissioned vs. Permissionless**

Source: <https://hedera.com/learning/what-are-distributed-ledger-technologies-dlts>

### Importance of Distributed Ledger Technology

Over the last couple of decades, computers have provided the process of record-keeping and ledger maintenance with great convenience and speed. Today, with innovation, the information stored on computers is moving towards much higher forms, which is cryptographically secure, fast, and decentralized. Companies can take advantage of this technology in many forms, one way being through distributed ledgers (Majaski, C., 2020). Blockchain is not only about technology, but also a serious challenge to our traditional models of regulatory compliance, organization, governance, and business operations (Meunier, S., 2018).

### Challenges and Risks Related to DLT Systems

DLT systems could have numerous benefits when applied to clearing and settlement, such as less counterparty risk, lower settlement fees, simplified operational processes because of fewer intermediaries, and a higher level of transparency (S. Aral, 2020). Distributed ledger technology (DLT) and blockchain, particularly its application in cryptocurrencies (or now increasingly referred to as crypto assets to avoid misunderstanding them as a part of currencies), have attracted extraordinary global attention. However, from blockchain development to the issuance and use of crypto assets, a range of issues has emerged that carry regulatory challenges in the areas of transparency, cybersecurity, and financial stability risks. This is particularly so for non-sovereign crypto assets. Some countries are even examining the feasibility of introducing a sovereign crypto asset (generally central-bank issued) as an alternative settlement currency, medium of exchange, or store of value. This idea remains untested and adds policy-related uncertainties. (Park, C., & Zhao, B., 2020). As the technology behind DLT progresses apace, legal issues that the new technology throws up and any changes in law required to address these, can lag behind. This can pose its own challenges to companies looking to implement DLT into a workable supply chain. Legal and risk advisers, both in-house and external, need to work together to implement procedure and policy to protect companies looking to use DLT technology (Martin, G., 2018).

### The future role for Distributed Ledger Technology

Distributed ledger technology is still in its nascent stage. It has already earned its place in the history of ledgers. Like the other ledger inventions, it might play a major role in the

evolution of our future society (Llfourn,2018) Blockchain doesn't just mean Bitcoin. DLTs can influence almost every conceivable part of society. The databases that are shared between multiple sites, regions, or participants enable a global, digital market for trade that transcends borders — with very few entry barriers and very low costs. They have the ability to succeed as an alternative to platform monopolies. Their open approach is transparent and democratic. DLTs create trust between parties where it's needed, meaning its use in administration, the financial and energy sector, politics, and the legal realm are all but inevitable (Bosch Global.,2021)

## Conclusion

Distributed ledgers like blockchain area unit passing helpful for monetary transactions. They hamper operational inefficiencies (which ultimately saves money). Larger security is additionally provided due to their decentralized nature, as well as the fact that the ledgers are immutable. Distributed Ledger Technology (DLT) will not replace double-entry accounting. But it will offer the world similar strides in business efficiency, clarity, and consequently, the trust-building that encourages trade and creates wealth.

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