The motivation behind decentralized and distributed storage is break down the silos often created by centralized cloud storage. The silos may affect the security goals of accessibility, availability, and confidentiality – and possibly the integrity of the data.
One could break free from the data silos through peer-to-peer networks, where peers interact directly and share resources directly.
One component which seemed to be missing from older P2P networks was a way to improve the long-term storage and availability of files, but this changed with the introduction of Bitcoin in 2008-2009.

Distributed ledger technologies provide availability, integrity, and byzantine fault tolerance in a distributed system. The concepts for decentralized sharing and storing of data started with the introduction of IPFS in 2014. From here, several new systems and technologies rose.
For example, Storj aims for a distributed cloud storage, the Hypercore Protocol aims on distributing large datasets, IPFS aims to replace client-server structure of the web.

Some researchers focus on the interaction with blockchain, mainly IPFS and Swarm, immutability of decentralized storage and its consequences and possible threats. There exists also those who disagree with the use of blockchains, due to scalability or latency problems.

Still, one of the key innovations that Bitcoin and blockchain technology brought to the table was an open consensus algorithm that incentivizes its peers to be compliant with the protocol. The linked data structure of the blockchain ensures integrity, and public blockchains are, well, public and available and accessible for anyone to study and participate in.
Still, the blockchains challenges regarding scalability, a different design emerged: the distributed ledger technology (DLT) which provide distributed, byzantine fault tolerant, immutable and ordered logs. But relying purely on the DLT alone is not feasible, as it suffers from scalability problems and limited on-chain storage capacity. Another blocker is transaction fees, if the blockchain has an integrated cryptocurrency to incentivize the maintain and drive the blockchain further.