

Internet of Assets: A Blockchain-Inspired Academic Program

Authors : Benjamin Arazi

Abstract : Blockchain is the technology behind cryptocurrencies like Bitcoin. It revolutionizes the meaning of trust in the sense of offering total reliability without relying on any central entity that controls or supervises the system. The Wall Street Journal states: "Blockchain Marks the Next Step in the Internet's Evolution". Blockchain was listed as #1 in LinkedIn - The Learning Blog "most in-demand hard skills needed in 2020". As stated there: "Blockchain's novel way to store, validate, authorize, and move data across the internet has evolved to securely store and send any digital asset". GSMA, a leading Telco organization of mobile communications operators, declared that "Blockchain has the potential to be for value what the Internet has been for information". Motivated by these seminal observations, this paper presents the foundations of a Blockchain-based "Internet of Assets" academic program that joins under one roof leading application areas that are characterized by the transfer of assets over communication lines. Two such areas, which are pillars of our economy, are Fintech - Financial Technology and mobile communications services. The next application in line is Healthcare. These challenges are met based on available extensive professional literature. Blockchain-based assets communication is based on extending the principle of Bitcoin, starting with the basic question: If digital money that travels across the universe can 'prove its own validity', can this principle be applied to digital content. A groundbreaking positive answer here led to the concept of "smart contract" and consequently to DLT - Distributed Ledger Technology, where the word 'distributed' relates to the non-existence of reliable central entities or trusted third parties. The terms Blockchain and DLT are frequently used interchangeably in various application areas. The World Bank Group compiled comprehensive reports, analyzing the contribution of DLT/Blockchain to Fintech. The European Central Bank and Bank of Japan are engaged in Project Stella, "Balancing confidentiality and auditability in a distributed ledger environment". 130 DLT/Blockchain focused Fintech startups are now operating in Switzerland. Blockchain impact on mobile communications services is treated in detail by leading organizations. The TM Forum is a global industry association in the telecom industry, with over 850 member companies, mainly mobile operators, that generate US\$2 trillion in revenue and serve five billion customers across 180 countries. From their perspective: "Blockchain is considered one of the digital economy's most disruptive technologies". Samples of Blockchain contributions to Fintech (taken from a World Bank document): Decentralization and disintermediation; Greater transparency and easier auditability; Automation & programmability; Immutability & verifiability; Gains in speed and efficiency; Cost reductions; Enhanced cyber security resilience. Samples of Blockchain contributions to the Telco industry. Establishing identity verification; Record of transactions for easy cost settlement; Automatic triggering of roaming contract which enables near-instantaneous charging and reduction in roaming fraud; Decentralized roaming agreements; Settling accounts per costs incurred in accordance with agreement tariffs. This clearly demonstrates an academic education structure where fundamental technologies are studied in classes together with these two application areas. Advanced courses, treating specific implementations then follow separately. All are under the roof of "Internet of Assets".

Keywords : blockchain, education, financial technology, mobile telecommunications services

Conference Title : ICEBEA 2021 : International Conference on E-Business Engineering and Applications

Conference Location : Dubai, United Arab Emirates

Conference Dates : December 20-21, 2021