

Blockchain and Internet of Things-Based Technologies for Intelligent Water Management System

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Water is a critical and indispensable resource for the sustainability of life, economic development, and the environment. According to the United Nations (UN) estimates, 70% of the world's population will live in cities by the year 2025, and the current centralized piped infrastructure relied upon by water utilities will be inadequate. Leveraging on the advancement in emerging blockchain, Internet of Things (IoT), and sensor technologies offers a means for efficient water management. In this era of Fourth Industrial Revolution (4IR), human creativity will be a critical requirement in this regard. This chapter explores the impact of blockchain and IoT on water management and examines the feasibility of its adoption in multiple case scenarios and instances such as stormwater management, water quality monitoring and reporting directly to consumers and other relevant stakeholders, and smart payment and contract, in order to sustainably deal with the challenges of global water crisis induced by climate change and rapid population growth. This chapter makes special and unique emphasis on the relevance of the research through an African perspective and view. Furthermore, the technical advantages, socioeconomic gains, and technological benefits of synergizing blockchain and IoT such as enhanced security and transparency, reduced operational cost, overall efficiency, and other merits are expatiated.

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