

Conceptualizing IoT Based Framework for Enhancing Environmental Accounting By ERP Systems

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Abstract : This research is carried out to find how a perfect combination of IoT architecture (Internet of Things) and ERP system can strengthen environmental accounting to incorporate both economic and environmental information. IoT (e.g., sensors, software, and other technologies) can be used in the company's value chain from raw material extraction through materials processing, manufacturing products, distribution, use, repair, maintenance, and disposal or recycling products (Cradle to Grave model). The desired ERP software then will have the capability to track both midpoint and endpoint environmental impacts on a green supply chain system for the whole life cycle of a product. All these enable environmental accounting to calculate, and real-time analyze the operation environmental impacts, control costs, prepare for environmental legislation and enhance the decision-making process. In this study, we have developed a model on how to use IoT devices in life cycle assessment (LCA) to gather emissions, energy consumption, hazards, and wastes information to be processed in different modules of ERP systems in an integrated way for using in environmental accounting to achieve sustainability.

Keywords : ERP, environmental accounting, green supply chain, IOT, life cycle assessment, sustainability

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