

A Web-Based Real Property Updating System for Efficient and Sustainable Urban Development: A Case Study in Ethiopia

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Abstract : The development of information communication technology has transformed the paper-based mapping and land registration processes to a computerized and networked system. The computerization and networking of real property information system play a vital role in good governance and sustainable development of emerging countries through cost effective, easy and accessible service delivery for the customer. The efficient, transparent and sustainable real property system is becoming the basic infrastructure for the urban development thus improve the data management system and service delivery in the organizations. In Ethiopia, the real property administration is paper based as a result, it confronted problems of data management, illegal transactions, corruptions, and poor service delivery. In order to solve this problem and to facilitate real property market, the implementation of web-based real property updating system is crucial. A web-based real property updating is one of the automation (computerizations) methods to facilitate data sharing, reduce time and cost of the service delivery in real property administration system. In additions, it is useful for the integration of data onto different information systems and organizations. This system is designed by combining open source software which supported by open Geo-spatial consortium. The web-based system is mainly designed by using open source software with the help of open Geo-spatial Consortium. The Open Geo-spatial Consortium standards such as the Web Feature Service and Web Map Services are the most widely used standards to support and improves web-based real property updating. These features allow the integration of data from different sources, and it can be used to maintain consistency of data throughout transactions. The PostgreSQL and Geoserver are used to manage and connect a real property data to the flex viewer and user interface. The system is designed for both internal updating system (municipality); which is mainly updating of spatial and textual information, and the external system (customer) which focus on providing and interacting with the customer. This research assessed the potential of open source web applications and adopted this technology for real property updating system in Ethiopia through simple, cost effective and secured way. The system is designed by combining and customizing open source software to enhance the efficiency of the system in cost effective way. The existing workflow for real property updating is analyzed to identify the bottlenecks, and the new workflow is designed for the system. The requirement is identified through questionnaire and literature review, and the system is prototype for the study area. The research mainly aimed to integrate human resource with technology in designing of the system to reduce data inconsistency and security problems. In additions, the research reflects on the current situation of real property administration and contributions of effective data management system for efficient, transparent and sustainable urban development in Ethiopia.

Keywords : cadaster, real property, sustainable, transparency, web feature service, web map service

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