

Geo-Collaboration Model between a City and Its Inhabitants to Develop Complementary Solutions for Better Household Waste Collection

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Abstract : According to several research studies, the city as a whole is a complex, spatially organized system; its modeling must take into account several factors, socio-economic, and political, or geographical, acting at multiple scales of observation according to varied temporalities. Sustainable management and protection of the environment in this complex system require significant human and technical investment, particularly for monitoring and maintenance. The objective of this paper is to propose an intelligent approach based on the coupling of Geographic Information System (GIS) and Information and Communications Technology (ICT) tools in order to integrate the inhabitants in the processes of sustainable management and protection of the urban environment, specifically in the processes of household waste collection in urban areas. We are discussing a collaborative 'city/inhabitant' space. Indeed, it is a geo-collaborative approach, based on the spatialization and real-time geo-localization of topological and multimedia data taken by the 'active' inhabitant, in the form of geo-localized alerts related to household waste issues in their city. Our proposal provides a good understanding of the extent to which civil society (inhabitants) can help and contribute to the development of complementary solutions for the collection of household waste and the protection of the urban environment. Moreover, it allows the inhabitant to contribute to the enrichment of a data bank for future uses. Our geo-collaborative model will be tested in the Lamkansa sampling district of the city of Casablanca in Morocco.

Keywords : geographic information system, GIS, information and communications technology, ICT, geo-collaboration, inhabitants, city

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