INDIVIDUAL, ORGANIZATIONAL AND TERRITORIAL CAPACITY BUILDING IN SPATIAL DATA INFRASTRUCTURE DEVELOPMENT

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ABSTRACT: The scientific knowledge, technological and organizational innovation and policy options frame the development and diffusion of Geographic Information Systems (GIS) to implement Spatial Data Infrastructure (SDI) at a global (GSDI), national (NSDI) and local scale (LSDI). GIS and SDI integrate data, technologies, users, standards and policies. The GIS focuses on the data production and analysis, while the SDI prioritizes communication, sharing and access to data and data services between users and systems.

SDI are digital information infrastructures that promote digital governance initiatives, spatially enabled societies and communities led by public institutions to promote participation and social inclusion, environmental quality, land sustainability and new knowledge economies. The potential of these initiatives according technical and scientific developers/users background depends on the ability to define an appropriate space and thematic scope, a common strategic vision, a strong political and administrative leadership associated with technological and capacity building development. The individual, institutional and territorial capacity building is a central element in the design, implementation and maintenance of these socio-technical digital infrastructures. The costs, challenges and potential impacts indicate the importance and the liability to develop SDI approaches and SDI awareness, readiness, maturity, performance and SDI effectiveness from the user perspective/usability assessment models.

This research includes a review and practical examples that explores the SDI complex nature, dynamic and multifaceted, as well as explores the evidence of the difficulty of designing and implementing approaches and SDI systemic/functional assessment models. The SDI assessment model proposal considers the results of R+D+i projects, education and training developed on: i) the acquisition of knowledge, skills and attitudes of individual users; ii) and components (policies, standards, data, users, and technologies) at organizational and regional level (NW Portugal) through the SDI development phases. This research was supported by a doctoral thesis develop and propose an exploratory assessment model of multilevel capacity building that questioning the extent to which GIS development projects enable individuals, institutions and regions to develop local (sub-national) SDI.

KEYWORDS: spatial data, assessment, development, indicators, human capacity