


Chapter 4

New Solutions and Methodologies for Data Acquisition and Management in Small Municipalities


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ABSTRACT

Promoting and managing sustainable territorial development require adequate tools that enable territorial managers to formulate appropriate choices. Technological solutions have emerged, and the paradigm has shifted from isolated GIS to a more collaborative production and dissemination of geographic data using spatial data infrastructures (SDI). A critical dataset for municipal land administration is cadastre. ISO 19152 standard of the Land Administration Domain Model (LADM) was published in 2012. Also, technology evolution, namely unmanned aerial vehicles (UAV), has changed data acquisition for cadastre. These are three pillars of modern territorial management: openness, co-production, and data sharing (SDI); models

DOI: 10.4018/978-1-7998-2249-3.ch004

(LADM); affordable technology (UAV). This chapter presents how municipalities can develop an SDI project, incorporating LADM guidelines and UAV data acquisition. The case study is based on a group of 32 small municipalities from São Paulo state, in Brazil, known as UNIPONTAL.

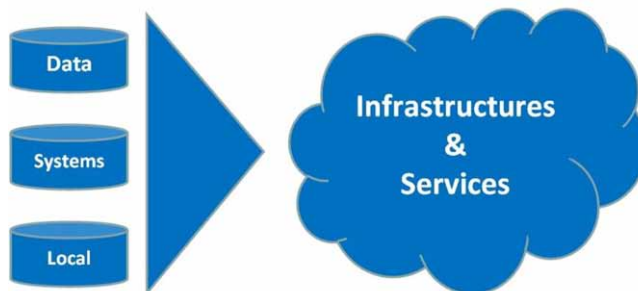
INTRODUCTION

Territorial managers are facing huge challenges due to the increase of pace of spatial pressure and transformations. There are multiple and complex problems that require wise and informed decisions, and for that accurate spatial datasets and decision support models are mandatory. This is not an exclusive requirement of major urban and metropolitan areas, as in rural context economic agents do create expectations and put pressure on the governing organizations. Thus, promoting and managing sustainable spatial planning and territorial development of small size and income municipalities, namely in rural context, does also require adequate tools that enable decision makers to formulate appropriate choices.

During the last decades a large set of technological based solutions have been developed by the scientific community and business companies linking the ability to acquire, store, process and publish spatial datasets (basically, traditional GIS and Remote Sensing Applications) with the capability of doing it based on web services, taking advantage of Internet and the significant cost reduction of connectivity.

Figure 1. Paradigm change – From GIS to SDI

Source: Julião, 2010



Therefore, today, more than the simple representation of land features through cartography, it is important to collect, organize, store, retrieve and explore spatial data finding the necessary knowledge for action. More than data repositories, it is important to have dynamic data flowing through the Information Society channels. In fact, the actual paradigm has shifted from an isolated GIS implementation

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