Chapter 15
Geospatial Digital Rights Management:
Challenge to Global Spatial Data Infrastructure

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ABSTRACT

This Chapter introduces the need for general Digital Rights Management (DRM) requirements. Further, it intertwines DRM with its spatial counterpart, Geospatial DRM (GeoDRM). However, unlike DRM, GeoDRM is far much complicated due to issues such as the development of Web Mapping technology among other issues. The Chapter discusses the ability of GeoDRM to mitigate transgression of Intellectual Property Rights (IPR). Highlighting economical and environmental wellbeing and other benefits of Spatial Data Infrastructure (SDI) geared towards global sustainable developments, the Chapter focuses on challenges of National Spatial Data Infrastructures (NSDIs) and Regional SDIs and the need to harmonize their standards for the upward mobility of global SDI (GSDI). Emphasizing the undisputed need for Local, Regional and Global Spatial Data Infrastructures (SDIs), in the presence of various Geo-communities and different GeoDRM models, the Chapter concludes that capacity building need to be urgently but carefully harnessed across all levels in order to develop cohesive GeoDRM policies.

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INTRODUCTION

Intellectual Property

Intellectual Property (IP) is a broad concept that covers several types of legally recognized rights arising from some type of intellectual creativity, or otherwise related to ideas. In today's legal systems, IP typically includes at least copyrights, trademarks, patents, and trade secrets (Kinsella, 2001).

Open Geospatial Consortium (2006) observed that to create a marketplace, individuals who own something of value/resource must have some level of assurance that they will be able to obtain fair value for its use or purchase. However, in the digital world, most digital entities are not sold in the usual sense due to the nature of digital resources and commerce. When a user acquires an application, he actually acquires the right to use a copy of the application. Possession does not equate with ownership. A system of software and resource licensing has grown up that ensures that the user may legitimately act upon a resource if he has a corresponding license for that act, owner should maintain the resource such as fixing errors while still assuring a guaranteed level of functionality. Optionally, the user may be asked to pay the owner of the resource based upon agreed criteria, whether that is a one-time fee, a per-machine fee, a usage fee or some other mechanism stated in the legal contract or license between user and owner. The user agrees to protect the owner's rights based on the agreement. The owner agrees to maintain the resource and allow a reasonable access to the users for any fixes that may be required.

Geocommunities and Data Sharing

Over the recent years, geocommunities have emerged across the globe whereby members share data trough the creation of geoportals where members are expected to deposit their data. A lot of data have been collected by different organizations and individuals across the globe.

Despite the creation of geoportals, most of the geodata contains little emphasis on conditions under which data ought to be used. A visit to acquire data from a geodatabase manager can be shocking to realize that the only reason one may not acquire data is that the data-collector/owner never specified how it ought to be used yet a lot of funds may have been accrued in its collection. It then becomes inevitable to recollect the same data at additional cost. Therefore, the importance of geocommunities can not be underestimated especially for the noble aspect of sharing due to the often prohibitive high cost associated with spatial data collection.

Another disadvantage with most datasets available for sharing within geocommunities is that the data have low spatial resolution thus rendering it lesser useful in certain applications. However, such data is useful for learning purposes.

There exist some national and international organizations that avail spatial data without charges as long as the source of the data is properly referenced. The organizations require one to register as a user. User identification often includes names, organization and discipline of affiliation and the purpose of the data. The United States Geological Survey (USGS) archives remote sensing data that can be downloaded free of charge. The International Livestock Research Centre (ILRI) has a repository of geodata that has been of help to many institutions and individuals including students' research works. Environmental Systems Research Institute (ESRI) is an International organization that provides a platform whereby users can set up a public-facing website and share open data.