

Chapter 13

Applications Development

ABSTRACT

The chapter synthesizes the applications development process. In recent years there has been a proliferation of geospatial information systems software, accompanied by an ever-increasing capacity and range of functionality, making selection decisions more complex. A geospatial information system is more than a collection of software and hardware. Rather, the system is an integrated information management solution that includes data, personnel, procedures, standards. When developing a planning support system, it is important to recognize that there will be a range of different user groups with different needs, expectations, and expertise.

INTRODUCTION

GeoSpatial information is now widely accessible, due to the use of web-based online mapping viewers with simple-to-use toolsets readily share information internally and externally, presenting information to the public through the internet.

Developments in hardware, networks and internet technologies mean that it is now feasible to have spatial information system applications delivering real-time data and web services that can operate on a wide range of hardware systems.

A GeoSpatial Data Infrastructure (GDI) may strongly improve efficiency, facilitating access to geographically-related information using a minimum set of standard practices, protocols, and specifications. Developing and

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implementing an SDI solution are based on: decentralized geospatial information framework, interoperability between spatial data infrastructures, to avoid duplication in data collection and management, to enhance decision-making, re-use and sharing.

BACKGROUND

The scope and ambition of the 2030 Agenda requires the design, implementation and monitoring of evidence-based policies using the best data and information available from multiple sources – including administrative data across the national statistical system, and data ecosystems more broadly. In this context, the Data Commons Framework introduced in the previous section can help us to understand the nature of the many data interoperability challenges that need to be addressed to support evidence-based decision making to achieve the SDGs.

Sharing data and information in the sustainable development field necessitates having a common understanding of the semantics used by all groups of stakeholders involved, ensuring that statistical data can be presented online on interactive maps combined with data gleaned from satellite and other observational and sensory sources and sometimes further reinforced by perceptions data generated by citizens themselves (so-called citizen generated data, or CGD). Common ways of organizing data, and information are needed to enable the exchange of knowledge between policy makers and development practitioners.

Another component to realizing effective data sharing, and particularly common semantics, is the use of industry standards. Across a number of sectors, there are both information models and accepted terminologies/coding systems, which provide the semantic foundation for the sharing of information. Key to this sharing is the ability to not only share labels, but to maintain consistency of meaning, particularly across organizations or national boundaries.

From a data perspective, the SDG data ecosystem is characterized by several tensions:

- Between global and local data needs – for instance between globally comparable statistics and disaggregated data that is compiled for local decision-making;

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