

# **Towards a Free and Open Source (FOSS) Spatial Data Infrastructure**

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## **SUMMARY**

This paper presents the progress made by several grassroots communities of Open Source developers and users that forms pieces of usable and affordable decentralized Spatial Data Infrastructures. The paper shows that such freely available and modifiable software can play a key role in making a truly Global Spatial Data Infrastructure. Money in developing countries can go exclusively towards developing skills and local capacity, instead of paying license fees that tie customers to a single vendor.

Drawing upon the models that have made Linux and Apache such successes in recent years the rapidly emerging Open Source GIS community has already made huge strides towards software that can truly compete with proprietary offerings. We show that a full stack of tools is being built, interoperably and in a number of programming languages, so that new projects can quickly stand on the shoulders of those that have come before. This will ensure that the acceleration in development that the past few years have seen will only increase. Many of the most important technical pieces needed to implement a Spatial Data Infrastructure indeed are already stable, moving towards even more maturity.

The Open Source movement additionally represents a new model for financing and implementing Spatial Data Infrastructures by taking a truly collaborative and iterative approach. Funding for projects comes from a variety of sources, for a number of different ends. We present a case study of the GeoServer project, to demonstrate how disparate actors deciding to work together can create high quality and usable software. We also show how this collaborative and iterative approach can potentially open the doors for new economic opportunities in the countries that employ them. Money spent on tailoring and translating the software can go towards developing local software industry, since no large company in some other country owns the code. This also allows more culturally sensitive solutions, as they are developed by people in the country, attuned to their real needs, instead of a one size fits all answer imposed from the outside. We believe this Open Source GIS movement is of utmost significance in developing affordable, high quality, usable software for building SDI's. We conclude that the Open Source GIS community is much more mature than one might initially think, and that it is well positioned to contribute to a truly Global Spatial Data Infrastructure.