

## The Future – can you see an SDI?

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### Abstract

Spatial Data Infrastructures (SDI) are evolving very rapidly. The Internet has been the key enabler and there exist already a number of very powerful protocols and tools that permit the rapid assembly of infrastructure components. It is also possible to credit the philosophical foundations of the Internet with creating the collaborative international environment that characterizes the development of the Global Spatial Data Infrastructure and all of its interoperable, federated infrastructures.

When one is in the midst of such an exciting, and rapidly changing landscape it is easy for the architects and engineers to say that things are evolving just as planned, just as they should. While a suggested analogy with Darwinian evolution is imperfect, it is, nevertheless, wise to be aware of the evolutionary forces, forces that are equally capable of fostering the rapid advances, creating backwaters and dead-ends, and competing organisms.

All aspects of an SDI, and the GSDI, will evolve to meet the expectations of the stakeholders, an ill-defined group, that will extend far beyond the currently small SDI community. A successful SDI will be responsive to the requirements of regulators, suppliers, operators, and a very diverse user community. Again, it is easy to accept the technical requirements that the users expose; our present vision of an SDI may be challenged frequently in order to accommodate the policy and regulatory requirements.

There has been a great deal of emphasis on the services from which an SDI is constructed, and to which users have access. There is, however, already concern that many of the data sets are not robust enough to support the processes and applications that downstream users are expecting to be possible. There are several approaches to dealing with this. The first is to encourage the use of very carefully designed and populated framework data sets. A second approach may be to add more intelligence to the data sets, even the data granules, themselves. This latter suggests that geospatial information infrastructures will begin to evolve to geospatial knowledge infrastructures. It also points suggests a new rigor for the data gatherers and information compilers.

If the geospatial community is able to respond to this latter opportunity, SDIs could become one of the cornerstones of a concept sometimes called “Digital Earth” in which information (perhaps even knowledge) from different domains becomes interoperable and integratable. Thus, in the future, biology, history, economics *etc.* will all have an implicit but seamlessly accessible geographic component, a geographic context.

**Full paper not available**