Integrated System for Data and Information Sharing

Background

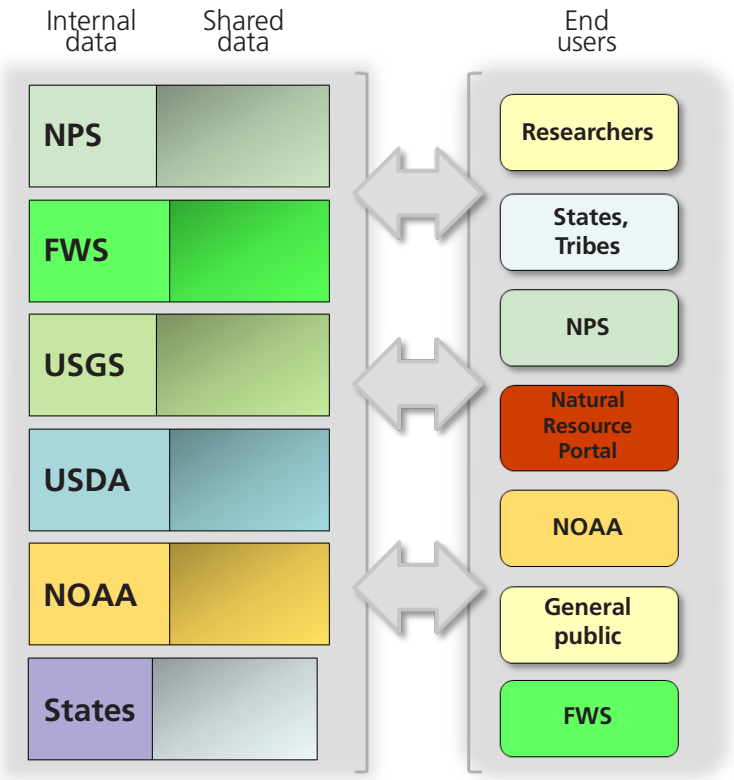
The key to integration and coordination among Department of Interior bureaus and their partners is the development of a modern, flexible data system that makes it easier for decision-makers, land managers, planners, scientists, educators, partners, and the general public to find and use the best available data and information to support the DOI and bureau missions.

Modern information technologies, and in particular, service-oriented architecture (SOA), are providing tools, procedures, and protocols that allow multiple data systems with differing structures to share information. A modern data system that allows us to share data and information with others will also facilitate the transformation of data into information through analysis, synthesis, and modeling to support our mission.

Service-oriented Architecture is the industry standard and Department of Interior "best practice" that allows data exchange and integration among different data systems, and SOA is integral to the DOI's conceptual and enterprise architecture principles (see http://www.doi.gov/ocio/architecture/). A basic premise of SOA is to structure components into concise, reusable, and sharable "services." These services then become flexible data building blocks that, using standardized tools, can be assembled or shared in a variety of ways depending on the information need. The DOI has determined that:

- SOA maximizes information system investments via flexible, reusable services
- SOA increases the sharing of systems and information across bureaus and agencies
- SOA reduces system risk due to reusable and shared services that have been designed for interoperability.

A good illustration of SOA-type information-sharing capabilities is the development of third-party travel websites such as Orbitz or Travelocity. When you book an airline flight, hotel, and rental car from one



Service-oriented architecture allows agencies to maintain their internal systems, yet make portions of their data available for sharing by using a common set of standards and processes.

of these websites, data are being exchanged among data systems developed by different companies. Each airline, hotel, or car rental company developed its own data system and has its own specific corporate data for internal use, but certain portions are exposed to external users (such as Travelocity) for the purpose of data assembling and sharing. The companies did not all get together in advance and design one large integrated system; instead, they used a common set of tools, standards, and governance procedures that made it possible to share data among different systems. The DOI is promoting the use of these same standards and technologies.

In an era of scarce financial resources, growing amounts of data, and quickly-changing user requirements, adopting an information management framework with maximum flexibility makes sense. SOA puts us in the best position to meet our users' information needs over the long term, and to benefit from sharing invaluable information both internally and externally.