

Draft White Paper

Data Set Infrastructure & Utilization – The Key To Success in the 21st Century

The ability to make comprehensive, responsible decisions requires seamless access to both historic and current “real-time” information. Government, business, non-profit and citizen-based initiatives all require this information in order to operate efficiently and responsibly. Access to accurate information controls the way we succeed at business and the way we live our lives each day. We have always been an information-based society, using storytelling, books, and schools as our primary information sources. In the last decade, however, the methods of acquiring information and the increasing amount of information available on a daily basis have dramatically increased, creating a need for immediate access, to the most current and relevant information available, as well as standardization among the various data sets to ensure the highest degree of interoperability and accuracy. In order to guarantee access to and management, standardization and usage among the different data sets, there are key components that dictate success and must exist for common benefit: These components are:

- I. Infrastructure: A completed, connected and redundant statewide fiber transportation system is necessary for equal access to “real-time” data sets. The transport systems’ value is fully realized in the efficient transmission and effective sharing of data.
- II. Data As Infrastructure: To view data as the infrastructure for the 21st century is to recognize the true potential of shared “real-time” data sets. Complete knowledge, based on comprehensive, accurate data, is the foundation for efficient and responsible decision-making at the local, regional, state, national and international level, for all future planning and any emergency situations. The benefit to the entire State of Colorado occurs when we can all obtain even and equal seamless access to “real-time” data via the statewide fiber-optic system. Instantaneous and continuous access to information will maximize efficiencies and strengthen our decisions in both the public and private sectors.
- III. Data Standards: The need to standardize and create the ability to share (public) data is now being debated/recognized worldwide as the significant element required to establish a global communications network. The United Nations is pursuing a worldwide standard for data; NATO is pursuing an international data sets standard and at the national level a standard to increase interoperability between the federal, state, regional and local governments is currently underway. A similar statewide initiative ensures that Colorado is able to operate effectively at any level in the exchange and sharing of various data sets.
- IV. Data Processes: In preparing the data sets to be shared statewide, we will be considering various processes that will monitor, support and improve the information. It is important to note that the collection and assimilation of data is not a static process. The usefulness of the data will be dependent on these adjunct processes (monitoring, supporting and improving) that will continuously interact with the data to ensure its reliability.

I. Infrastructure:

Recognizing that Colorado's future lay in the development of technology. Governor Owens 1999 proposal for a statewide fiber-optic backbone was a brilliant vision for the future, and has established the foundation for much of Colorado's utilization of technology in the years to come. The statewide fiber-optic backbone is the transport system of the "real-time" data sets that will enable timely communications at the local, regional and statewide level. With the infrastructure in place, the option now exists for statewide seamless access to information. Currently, there are 64 courthouses in the State of Colorado. On a daily basis, every one of them gathers valuable data that is not shared with the others. By connecting all 64 county courthouses to the backbone and regional data sets, the ability to instantaneously share information at the local, regional and state level becomes the new reality that will have tremendous impact on local, regional, state and national planning, census data collection and issues of concern around homeland security.

II. Data As Infrastructure:

...it is largely because civilization enables us constantly to profit from knowledge which we individually do not possess and because each individual's use of his particular knowledge may serve to assist others unknown to him in achieving their ends that men as members of civilized society can pursue their individual ends so much more successfully than they could alone.
- [F.A. Hayek](#)

In the 21st century, data has become the infrastructure that we as a society and individuals are building our future on. In Colorado since our infrastructure, having achieved individual success is ready to move to the next phase: utilization of data as infrastructure -

This trend is not exclusive to Colorado, recent historical events have challenged our thinking and compelled us to re-evaluate many of our data isolationist views and acknowledge that shared data is necessary for everyone's benefit. Commenting on the critical need for shared data to fight terrorism, Attorney General John Ashcroft stated, "Information is the best friend of prevention. The September 11 attacks demonstrate that the war on terrorism must be fought and won at all levels of government. To meet this continuing threat, law enforcement officials at all levels – federal, state, and local – must work together, coordinating information and leveraging resources in the joint effort to prevent and disrupt terrorist activity."¹

The need for accurate, immediate data is not exclusive to homeland security issues. In communities throughout the country, both rural and urban, main street businesses, hospitals, libraries, and newspapers are all beginning to find that their futures are in some way connected to networks of computers and the information they provide. The pharmacist, with the click of the computer mouse, now verifies insurance coverage, updates warning actions and harmful side effects, all in less than 30 seconds. An isolated rural hospital has the potential to link to the finest doctors in the land should additional consultation be needed for diagnosis or treatment of patients. The ability to simultaneously access and coordinate various information systems is quickly becoming the standard by which everything else is measured.

¹ Department of Justice, Press Release, "Attorney General Orders New Steps To Share Information Relating To Terrorism With Federal Agencies As Well As State And Local Government", April 11, 2002

Another data set system currently receiving a great deal of attention is spatial data, also referred to as GIS (Global Information System). Spatial data is defined as data that refers to information about places or geography and has traditionally been shown on maps. Spatial data is considered a national capital asset. Many applications are dependent upon accurate spatial data. Examples include the analysis and management of utility infrastructures, transportation, energy, emergency management and response, natural resource management, weather and climate analysis, disaster recovery, homeland defense, law enforcement, protection planning, public health and other civilian or military strategic issues. The seamless spatial information needed for these applications can range from highly detailed local data, such as the nature of specific hazardous material stored in a particular room of a single building, to the various data needed for real-time projection of the probable effects of natural disasters.²

As we begin to recognize the potential of shared “real-time” data, it has become apparent that in order to coordinate the various data sets there must be a standard that allows the various software applications to easily communicate with each other.

III. Data Standards:

² Office of Management & Budget, Circular No.A-16, pg. 5