

Submitting Organization: U.S. Department of Energy, Office of Scientific and Technical Information

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Paper Name: Serving the Public with Science Information in an E-Government Environment

Category: The Mandate for E-Government | Public Demand

Format: MS Word (below)

Document Name: public.doc

## Serving the Public with Science Information in an E-Government Environment

### Issue Statement

With the technology infrastructure in place to allow new uses of information, both direct and indirect service to the public can be greatly enhanced to the benefit of national interests in science and education.

### Background

Traditionally, information held by Federal agencies has been made available to the public in response to statutory mandates. The primary mechanisms for availability have been through Federal depositories and redistributors such as the U.S. Government Printing Office (GPO) National Depository Library Program and the Department of Commerce National Technical Information Service (NTIS).

These distribution outlets focused on providing Federally sponsored documents in printed-copy or microfiche form to the public in response to demand.

As the digitization of information evolved, digitized citations and abstracts providing metadata about documents were made available on large databases to Federal outlets to assist in meeting public demand.

GPO uses citations from these databases to assist depository libraries in cataloging large files of microfiched documents available to the public, while NTIS uses these citations to announce availability of documents to the public on a sales basis. In addition, NTIS leases electronic tapes of Federal citation databases to commercial information vendors.

The emerging widespread application of information technology and tools has provided Federal agencies with the ability to accomplish customer transactions in an E-Government environment. The science agencies can now easily provide direct public access to their vast resources at little, if any, incremental cost per user served.

### Situation

The advent of the digital revolution leading to the origination of full-text documents in electronic forms now provides fast and easy access to federally sponsored and held

information, while information technology and tools such as the Internet provide revolutionary means of delivering information at a greatly reduced cost per user served.

Metadata and full-text documents can now be used to locate, combine, and assimilate existing information to facilitate knowledge creation.

This electronic phenomenon creates a completely new dynamic in serving public demand for scientific and technical information, and is changing the face of information communication, dissemination, sharing, and use.

### Facts

According to data from the National Science Foundation, in 1996, there were over three million science and engineering jobs in the U.S., a number that is expected to increase by 44% by 2006. As this number grows, so does the demand for both federal and public access to the increased body of science information that is being generated as a result of these jobs.

Public demand for science information occurs in many forms. One is the direct demand of scientists and researchers and other interested stakeholders in industry, academia, the non-profit community and the public at large. These communities use science information in the conduct of research and development activities, in developing and implementing technology applications based on scientific research, or in serving special interests.

Science information serves specialized niche communities in this regard, and its value lies in the strategic application and use to enable scientific discovery rather than the sheer volume of users. Science information also plays a vital role in the process of educating future scientists, as it is applied to academia as a basis for experimentation, discovery, and learning.

In the global economy of the 21<sup>st</sup> century, educators and researchers must have the information they need to optimize their performance in both the classroom and the laboratory. This is critical at a time when the U.S. falls well below many countries in both science and math achievement, and the U.S. is losing ground in the patents issued in comparison to patents issued to foreign citizens.

Another type of public demand is represented in the inherent demand of U.S. citizens for sustained national economic competitiveness and continuous improvement in the health and well being of the nation's populace. This indirect demand translates into a need for science information held by Federal agencies to be provided in ways that maximize its value and effectiveness to those who can best apply it to the needs of, and on behalf of, the U.S. citizenry.

The opportunity now exists to meet both the direct and indirect demand of the U.S. public in ways that only recently were heretofore impossible.

## Mandates and Guidance

In addition to agency-specific legislation directing the dissemination of information to the public, there are also some key mandates and guidance that apply to all agencies. These include:

- USC Title 44, Public Printing and Documents, in which each agency is required to manage information resources to improve integrity, quality, and utility of information to all users within and outside the agency, including capabilities for ensuring dissemination and public access to government information (44 USC, Sec. 3506);
- Paperwork Reduction Act of 1995, which defines responsibilities of the U.S. Office of Management and Budget (OMB) to develop and implement management policies for the dissemination of information (44USC, Sec. 3501);
- OMB Circular A-130, Management of Government Information, which provides guidance in the implementation of the Paperwork Reduction Act, and has recently focused on issues such as collection and dissemination of information in electronic formats, respective roles of public and private sector information providers, and the pricing of information products.

## Conclusions

The convergence of content, technology, and tools into vast integrated networks is becoming possible due to the capabilities of the electronic age and the implementation of E-Government by Federal Agencies.

Through extensive public/private sector collaboration, increasing public demand for science information and the benefits it can provide to the nation and its citizens can be realized.

Congress should encourage the development of and ongoing involvement in such collaborations by both public and private sector entities, creating a national environment conducive to working in concert for the advancement of science and the fulfillment of educational goals.