Scientific and Technical Information Program (STIP) Update

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Opening/Introduction

Good morning! I am very pleased to be here today and very excited to see so many of you here to join us for this InForum meeting. Meetings like these allow us the opportunity to network together to learn about new tools, technologies, information resources, and many other things. Already...we've heard about the successes of the National Library of Education and our own vision for a National Library of Energy Science and Technology....and we're just getting started with the meeting!

It is my pleasure to provide you with an update of our program development, policy, and Scientific and Technical Information Program (STIP) coordination activities. Each year, when this presentation is made, it seems we begin by stating that "it is a time of change". This year, that phrase is a gross understatement. I'm going to give you a quick rundown of what is influencing these changes, the accomplishments that we've had over the past year, what the changes are, the challenges that we still face, and the benefits we hope to gain.

Why Change?

There are three major reasons why OSTI and the entire STIP community are pushing so fast for change: budget restrictions, changing technology, and end user expectations.

Budget Restrictions. The Department currently spends an estimated $250 million of its research dollars annually across the complex on scientific and technical information management. Looked at independently, that may seem like a lot....but in reality, it only represents 4% of the average annual R&D expenditures. And it gets more difficult each year to hang onto that 4% as competing overhead items and similar expenses get in the way. These budgetary issues have significant impacts on the Department's STI program. In fact, just since 1996, OSTI has taken a 40 percent reduction in both funding and staffing...and we know we're not alone. While these reductions have been painful in terms of adverse employee impacts, OSTI and the STIP community remain lean, viable organizations, capable of effectively serving the research community.

Changing Technology. How, then, do we stay lean, viable and capable? Innovative use of technology is essential. We can no longer afford to operate in only paper processing environments.

We are truly in a state of rapid transition. We are re-engineering our paper-based processing of incoming scientific and technical information, with accompanying workflow tasks and software designed for paper reports, to a primarily electronic processing environment. With this change, we are redesigning a number of processes using new software, new descriptions of the workflow functions, and generally a new perspective on the requirements. These technological changes in the way we do business, or our business practices, will ultimately permit us to operate more efficiently...and hopefully to provide broader STI services to our users.

End User Expectations. What is it that our users want and need? It seems that this is a question that we must ask ourselves almost daily. As our users are influenced by their own budget restrictions and grasp new technologies themselves, they begin to demand different types of services from us. Instant access to scientific and technical information, at the desktop, is the overriding theme of user feedback. Expectations have changed over the last few short years. People are not generally willing to wait long for what they want. Do you remember when it was acceptable to mail a letter to a friend or colleague, have them receive it 3-5 days later...give them a couple of days to respond, then 3-5 days later get a reply? That wasn't acceptable for long once our appetites were whetted with new services. Federal Express and similar services appeared on the scene, and instantly, we could get a letter to someone in 24 hours...and expect something in return just as fast. Was that good enough? No....now we expect our electronic mail messages to be delivered the minute we hit that SEND button...and can reasonably expect a response...generally the same day! Well....our users want that with scientific and technical information too....and we can't do that by staying in a strictly paper world.

What Have We Accomplished?
We have all been incredibly busy!
- In 1994, OSTI with your input and participation recognized that the Departmental STI Program was in a changing environment characterized by less centralized control, reduced reliance on compliance, and more focus on outcome than process. As a result, we changed our DOE Order to reflect that....taking it from over 100 pages to 8 pages. One of the most significant results was the re-definition of STI to focus on information that is "useful" to others outside of the originating site. This is still the definition of STI that applies today.
- In 1995 and 1996, we pushed ahead and started working at our individual sites on our electronic capabilities, defining agreeable electronic exchange formats, streamlining paper processes, creating collections of digitized STI...and kept our basic STI program running.
- In the Summer of 1997, just last year, we started a new process. We met, collaboratively developed a Strategic Plan for the Department's Scientific and Technical Information Program, and set a course for our future actions.
- This year, in February, with the STIP Strategic Plan as the blueprint and coupled with the latest information technologies, the Department's STI Program participants defined the next generation of STI access and dissemination processing in a decentralized environment. We came away from that meeting with a redefined metadata structure, a

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common understanding of our vision for a virtual library environment, and a laundry-list of revisions that needed to be made to the DOE Order and Guide.

- Now...less than 3 months later...we are well on our way to achieving our electronic vision. The newly revised DOE Order and Guide are in the official concurrence and review process. We have made the decisions necessary to redesign the OSTI processing system to handle streamlined metadata and electronic full-text, and we're doing all this through open communication and working closely together.

What are the Changes ?

OSTI and our partners are committed to meeting the paper-to-electronic challenge by the end of this fiscal year. Right now, we, at OSTI, are in the midst of planning and defining significant changes within our processing systems to allow greater flexibility to all those who submit STI. These changes will forever alter the Department's STI Program.

- We are procuring commercial-off-the-shelf software to replace the existing inflexible Report Processing System and affiliated processes. A new database management system, electronic document management system, and other associated hardware/software platforms will be in place by October 1 of this year.
- The design is largely to expedite electronic full-text and electronic metadata, although the system will accommodate paper STI to a lesser extent when needed.
- The focus of OSTI staff will be on value-added functions, such as implementing machine-aided subject analysis, proactively supporting the needs of the STI originating sites, providing problem resolution, facilitating life-cycle practices, and serving the full-text needs of the end-users.
- OSTI will continue to fulfill Departmental mandates for broad public dissemination by administering various agreements with intermediaries for public access to include NTIS, GPO, and international exchanges. Agreements with external partners are being modified now to reflect the changing environment for electronic STI.
- Sites routinely review the STI product prior to publication for proper clearances - such as patent or intellectual property review, classification review, and other approvals. OSTI has traditionally provided a second review to ensure that markings were consistent and that only appropriate documents were publicly released. Electronic or Web-based publishing through distributed sources makes a second review by OSTI impractical and unwarranted. Therefore, OSTI will be eliminating most of its evaluation function and will accept the release and announcement markings provided by the sites.
- The advent of site-hosted publicly accessible servers has also changed who accounts for public release. Traditionally, DOE's external stakeholders (OMB, GAO, Congress, and others) have relied on OSTI's publication dates as the official public release record for DOE's STI. Both credit and accountability will properly rest with the site which publicly releases and makes STI openly available.
- Methods for including electronic full-text documents into the "DOE collection" are also being broadened. Envisioned are: (1) a full-text document may be transmitted to OSTI with the corresponding metadata; (2) the site may post it at a location for OSTI to capture

it upon notification via the metadata; or (3) the site may choose to host access to the full-text and provide OSTI the metadata record with a unique URL to link to each full-text document on the site's server.

- A reduced set of metadata will be provided by sites to OSTI in lieu of the current data provided on the DOE F 1332.15. The metadata record will serve as the official notification of the release and announcement of an STI document/product. There will be two methods for providing the metadata electronically: (1) via a new Web form similar to the process for using the Web version of the 1332.15; and (2) batch processing from site databases that capture the metadata during the site's document preparation (a DTD, or Document Type Definition).

- Validation of metadata elements provided to OSTI in the future will be accomplished via automation as much as possible; rules will be relaxed significantly. The traditional OSTI process of intervening through manual input or editing of data will be significantly curtailed. However, OSTI will maintain a "metadata repository" as a central locator of DOE's STI.

- A broader range of electronic full-text formats, such as standard word processing formats, are being accommodated in the redesign process. OSTI will be able to carry the native format (assuming it is one of the accepted formats in which the originating site created the STI) for certain uses, as well as making a number of electronic formats available for access in STI products (such as the DOE Information Bridge). OSTI currently has scanned over 25,000 DOE technical reports and made them available through the DOE Information Bridge. Significant costs and issues exist in the search/retrieval, user access, and the required hardware/software systems to handle such information. Scanning will continue, on a decreased basis, until hard-copy submittal of information is eventually phased out. This change in practice will allow users to view the STI product in its original version as created by the site, in addition to accessing the product in a standard format (currently TIFF G4 is used, but OSTI is planning for a future standard to be a full-text searchable format, although transition plans are not firm at this time).

- Nuclear Science Abstracts (NSA) has been a static file for years. Effective October 1st this year, the Energy Science and Technology Database (EDB), in its current format, will also become a static file. We plan to put this legacy data (in the streamlined metadata form) into the DOE Information Bridge.

- OSTI intends to utilize automated tools to the extent possible to create subject categories, keywords, and abstracts when not provided by the sites. OSTI will potentially maintain controlled vocabularies/thesauri to facilitate subsequent search/retrieval and dissemination.

- OSTI will continue to maintain a central locator to DOE's STI through the DOE Information Bridge. We've made some vast improvements to the system for public availability...and plan to merge those features with the DOE and contractor product. Other modifications will incorporate distributed linking and searching features such as those tested in the Federated Collections Pilot project, but with the additional feature of providing a comprehensive index to DOE's STI (from NSA and EDB), which will serve as a key component of EnergyFiles, our virtual library environment.

- OSTI will continue to serve as the final repository for STI of the originating sites or programs that will not host public access to full-text documents permanently.
- In the near term, OSTI will maintain the capability to process paper-copy received from sites unable to submit electronic full-text documents in one of the accepted formats, but the priority for processing and access will be lower than for electronic documents.

Remaining Challenges

- We still need to develop business practices for handling classified and sensitive information, with an electronic focus.
- We still need to transition our STI computer software activity, ESTSC, to a decentralized electronic environment.
- We still need to finalize comprehensive arrangements with journal publishers to provide cost-effective and timely electronic journal access across the Department, to include access to DOE's own STI published in journal literature.
- We still need to develop and implement fair and uniform STI performance objectives and expectations which encourage improvement and recognize accomplishments throughout the STIP community.
- And many others still to be determined....

Benefits
Several benefits will occur within the DOE STI community as a result of the Departmental redesigned electronic STI management concept:
- Places management of information closer to originator, who best knows the information.
- Recognizes the site which created and made the STI available.
- Imposes less control and compliance.
- Focuses on the outcome (broader access to STI) rather than the process.
- Reduces costs incurred for processing paper documents.
- Improves timely availability of scientific and technical information.
- Establishes the framework for distributed access to scientific and technical information across disparate Departmental sites.
- Reduces processing costs of the sites through the acceptance of more electronic native formats.
- Positions the Department to better respond to changing technologies.
- Eliminates creating and maintaining duplicative data systems (at sites and at OSTI), thus saving costs for STI processes DOE-wide.
- Encourages/facilitates the STIP community to identify and implement best business practices associated with electronic STI life-cycle management.
- Promotes integration of the STI Program across the Department.

Summary and Next Steps

Based on budget restrictions, changing technology, and the growing end-user expectations for full-text at the desktop, the STIP community is working together on an aggressive timeline for the initial implementation of this concept. Through the STIP goal working groups, implementation guidelines have been (and will continue to be) created. These changes will culminate in new ways of doing business, starting October 1st of this year. October 1st is only the start. I'm sure we will need to refine our processes and need to continue with our efforts to achieve this decentralized electronic vision. To help us do that, we will again meet, as a stakeholder group, to keep the momentum and continue our aggressive timeline for change. Our next meeting will be November 3-4, 1998 in Oakland, California. We hope that you will join us.

This afternoon, there is a breakout session to talk more specifically about the STIP activities. Some topics to be covered are the site prepared announcement record, acceptable electronic formats, mechanics of submission vs. site availability, STI software, and various other DOE Order and Guide topics.

Finally, I'd like to say that even with all of these changes, what remains **unchanged** is our joint commitment and dedication to meet the needs of our customers and stakeholders who desire access to DOE's STI. Thank you.

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