

*U.S. DEPARTMENT OF COMMERCE
Office of Inspector General*



*NATIONAL TECHNICAL
INFORMATION SERVICE*

New Business Model

Final Audit Report No. FSD-15100-3-0001/December 2002

**PUBLIC
RELEASE**

Office of Audits, Financial Statements Audits Division



UNITED STATES DEPARTMENT OF COMMERCE
The Inspector General
Washington, D.C. 20230

DEC 31 2002

MEMORANDUM FOR: Ron Lawson
Director
National Technical Information Service

FROM: Johnnie E. Frazier

SUBJECT: *National Technical Information Service's New Business Model*
Final Audit Report No. FSD-15100

This is our final report on our review of the National Technical Information Service's new business model. According to NTIS officials, the model reflects NTIS' goals to revitalize its web site and expand its customer base by offering easier and more affordable access to its wide array of information resources.

While the new model is potentially a good first step to achieving these goals, we are concerned that it lacks adequate and verifiable documentation to support revenue and cost projections, and therefore to adequately support its viability. Specifically, under the new model, users will be able to download from NTIS' web site some reports for free and others for a fee, and will be able to purchase copies in paper, CD-ROM, and other formats. However, the model's estimates for the level of income NTIS expects to derive appear to be based more on intuitive reasoning rather than on a rigorous methodology for charting and substantiating probable outcomes. Therefore, we believe that projected numbers of free and purchased downloads and of purchased hard-copy reports cannot be relied upon as indicators of the model's true potential for improving NTIS' financial viability.

We recommend that—to support the viability of the new business model—the Director of NTIS require management to (1) make it clear to interested parties that there are major uncertainties associated with the business model's estimates during future discussions and presentations of the model, (2) periodically review the estimates to determine whether they are realistic and achievable, and (3) evaluate the impact of the new business model on NTIS' operations on a monthly basis, and determine whether the new model is achieving the desired results or whether modifications are needed. In your response to our draft report, you indicate that NTIS generally agrees with our recommendations.

INTRODUCTION

The National Technical Information Service is the nation's largest central source of unclassified scientific, technical, engineering, and business-related information produced by domestic and foreign sources. Its mission in disseminating this information is to stimulate innovation and discovery and thus support economic growth and job creation. The bureau maintains a database that includes a bibliographic listing of reports generated since 1964. At present, more than 2 million titles covering 350 subject areas are cataloged in the database.

Submission of materials to the bureau was voluntary until 1992, when Congress passed the American Technology Preeminence Act (ATPA). This law mandated that executive agencies transfer to NTIS all unclassified scientific, technical, and engineering information that results from federally funded research and development.

NTIS is required by its enabling legislation to be self-sustaining, and the bureau must therefore generate revenue to cover its operating costs. To do so, it leases its database to vendors and charges for products and services it provides. In passing the Department of Commerce's 1993 appropriations bill, Congress moved to bolster NTIS' efforts to become self-sustaining by replacing the bureau's annual appropriation with a one-time appropriation of \$8 million to establish a revolving fund for NTIS operations.

Improving Service Utilization

To improve service utilization, NTIS developed a new business model, which is designed to enhance information dissemination, expand NTIS' customer base, and increase demand for its products. NTIS' database, which includes abstracts of reports, offers a wealth of information of potential interest to a diverse cross section of users. But NTIS believes its traditional way of providing access has limited dissemination of its products. The vendors who lease the database make it available for a fee to interested non-government users—typically businesses, industrial concerns, and research institutes, rather than individuals (government agencies have free access). The vendors pay NTIS a portion of the user fees, which the bureau applies to its costs for ongoing database development and maintenance. NTIS also offers copies of reports for sale, and gives customers five ordering options: via mail, phone, fax, email, or—for those dated 1990 and later—the NTIS web site. Reports are provided in paper, microfiche, or CD-ROM at prices that are based on the document's number of pages.

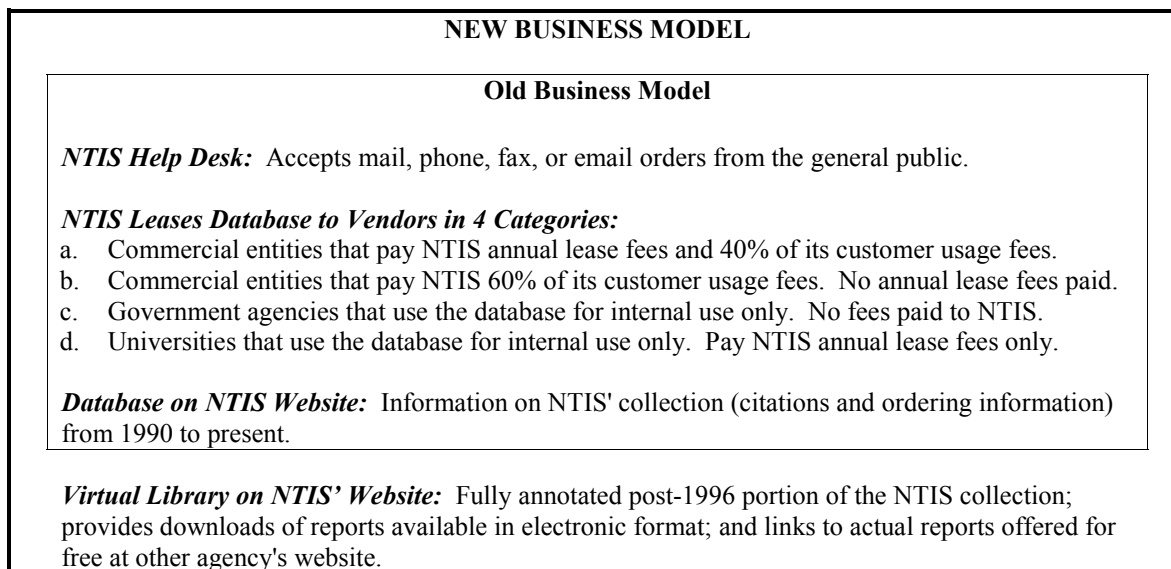
The Old Model vs. the New Model

NTIS believes its old model was appropriate for pre-Internet days, when the bureau had no practical way to reach large numbers of potential customers, short of spending massive amounts on marketing and printing. The old model restricted the appeal of the bureau's products and services to business, industry, and research institutions. NTIS expects the new model to generate more interest in—and thus greater use of—its products and services.

The new model provides the same product options as the old, but establishes a virtual library at the NTIS web site that offers abstracts and downloads of reports dated 1997 and later. (See Chart 1 below.) Reports of 20 pages or fewer, which represented about 3 percent of NTIS' FY 2000 annual sales, can be downloaded free from the virtual library. Reports of more than 20 pages, which accounted for approximately 17 percent of FY 2000 annual sales, will cost \$8.95 per download. When applicable, the NTIS web site will link to other agencies' sites where users can download free copies of reports. In addition, the new model uses sophisticated tracking technology, known as persistent digital identifier, to create a permanent repository for copies of all reports whose titles are listed in the NTIS database, including those that an agency ultimately removes from its own web site.

The bureau estimates the total cost of launching the redesigned web site will be \$500,000—25 percent of that amount was used to finance development of the virtual library, which became operational in April 2002. Another \$50,000 to \$150,000 will finance a broad-based marketing campaign that targets traditional and nontraditional users. Annual costs for maintaining the library are expected to average roughly \$150,000 beginning in FY 2003 and beyond.

Chart 1: NTIS' New Business Model



OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of our audit were to assess the financial viability of NTIS' new business model and the soundness of its cost and revenue estimates. We examined the financial plan that supported the new model, the processes involved in developing and implementing it, and the assumptions used to determine projected income and related expenses. We reviewed all pertinent documentation related to the new model and interviewed key NTIS personnel regarding the main features of both the old model and the new. We did not assess the reliability of computer-processed data because such data was not relevant to our audit objectives. We did not assess NTIS' compliance with laws and regulations because such an assessment was not significant to the objectives of our audit.

We conducted our fieldwork between April and June 2002 in accordance with generally accepted government auditing standards and under authority of the Inspector General Act of 1978, as amended, and Department Order 10-13, dated May 22, 1980, as amended.

FINDING AND RECOMMENDATIONS

NTIS Has Inadequate Documentation to Support the Assumptions Used to Develop the New Business Model's Estimates

OMB Circular A-123, Management Accounting and Control, requires agencies to implement organizational policies and procedures to reasonably ensure that reliable and timely information is obtained, maintained, reported, and used for decision making. In addition, sound business practices require (1) the use of rigorous methodologies to chart and model business processes and their associated cost and income assumptions, and (2) the periodic review of cost/revenue estimates against actual performance to evaluate whether the estimates were realistic and to develop a track record upon which to base future projections.

Since NTIS implemented its new business model in April 2002, there were no actual numbers against which we could evaluate its projections at the time of our review. However, we found that the model itself was built on assumptions derived from intuitive estimates rather than verifiable forecasting methods and processes. As a result, management could not provide us with documentation to support its projected numbers of free downloads, purchased downloads, and purchased copies of reports in hard copy or other media, and therefore could provide no support for anticipated revenue from the new model. Chart 2 depicts NTIS' projections for the new business over the next three years.

In addition, its price for purchased downloads—\$8.95— is only partially supportable. It is based on the bureau's incremental costs for processing each new order—\$7.57 in 2000—plus a small amount that management expects to offset the need for future rate increases. However, NTIS has not yet developed projections of future processing costs.

Because the projections and other data used in NTIS' new business model are not verifiable, the value of the model as a tool for planning and supporting bureau operations is questionable.

Chart 2: New Business Model Projections (NTIS Estimates)*

	Per Unit Revenue	Year 1 Increase/(Decrease)		Year 2 Increase/(Decrease)		Year 3 Increase/(Decrease)	
		Units	Amount	Units	Amount	Units	Amount
Traditional Users							
Loss due to free downloads **	\$ 16.00	(1,250)	\$ (20,000)	(1,250)	\$ (20,000)	(1,250)	\$ (20,000)
Purchased downloads	\$ 8.95	10,000	\$ 89,500	10,000	\$ 89,500	10,000	\$ 89,500
Hard-copy sales loss **	\$ 40.00	(5,000)	\$ (200,000)	(5,000)	\$ (200,000)	(5,000)	\$ (200,000)
New Users							
Free downloads	n/a	20,000	\$ --	40,000	\$ --	60,000	\$ --
Purchased downloads	\$ 8.95	5,000	\$ 44,750	10,000	\$ 89,500	15,000	\$ 134,250
Hard-copy sales **	\$ 40.00	2,000	\$ <u>80,000</u>	3,000	\$ <u>120,000</u>	4,000	\$ <u>200,000</u>
Total Estimated Revenue			\$ (5,750)		\$ 79,000		\$ 203,750
Estimated Expenses			\$ <u>162,500</u>		\$ <u>75,000</u>		\$ <u>75,000</u>
Net Impact on NTIS' Operations			\$ <u>(168,250)</u>		\$ <u>4,000</u>		\$ <u>128,750</u>

* Source of all data is NTIS.

** Per unit revenue is an average sales price.

CONCLUSION

The 3-year projections for the new business model noted in Chart 2 above show minimal short-term impact on NTIS' operations, revenues, and expenses. See Chart 3 for the FY 2002 financial plan for NTIS operations. According to NTIS officials, the bureau will closely monitor the model's actual impact and remain open to changing its pricing structure and other aspects, as needed. Although NTIS cannot document the model's viability, the initial years' financial projections are so low that they will have little effect on the bureau's overall operations in the short term. It is not yet clear if the model will be a long-term solution to the bureau's financial needs. In the meantime, however, NTIS should gather the data it needs to document the model's value.

Chart 3: FY2002 Financial Plan*

	<u>Revenue</u>	<u>Cost</u>	<u>Net</u>
Clearinghouse Products and Services			
• Announcement Product Group	\$ 923,300	\$ 3,409,300	\$ (2,486,000)
• Full text Product Group **	5,460,200	6,167,800	(707,600)
• Computer Product Group	5,971,400	4,748,500	1,222,900
• Standing Order Product Group	1,971,500	1,467,000	504,500
• Paper Subscription Product Group	731,400	1,187,600	(456,200)
• Electronic Subscription Product Group	3,310,000	2,478,800	831,200
• Clearinghouse Services Product Group	12,734,700	11,361,400	1,373,300
• Miscellaneous	<u>1,242,800</u>	<u>1,062,900</u>	<u>179,900</u>
Total Clearinghouse Products and Services	32,345,300	31,883,300	462,000
Web Hosting Services	<u>531,100</u>	<u>484,600</u>	<u>46,500</u>
Total NTIS Operations	\$ <u>32,876,400</u>	\$ <u>32,367,900</u>	\$ <u>508,500</u>

* Source of all data is NTIS.

** The Virtual Library is a subset of the Full Text Product Group.

Recommendations

The Director of NTIS should:

1. Make it clear to interested parties, including the Department's senior officials, that there are major uncertainties associated with the business model's estimates/projections.
2. Periodically review the projections to determine whether they are realistic and achievable, and
3. Evaluate the impact of the new business model on NTIS' operations on a monthly basis, and determine whether the new model is achieving the desired results or whether modifications are needed.

NTIS Comments

NTIS generally agreed with our recommendations and assured us that future discussions with policymakers will note that there are uncertainties associated with the model. In addition, NTIS has put procedures in place for monthly reviews of all projections to determine whether they are realistic and feasible and to assess the overall impact of the model on NTIS operations. NTIS' complete response to our report is attached.

* * * * *

Please provide us with your action plan addressing the recommendations within 60 calendar days, in accordance with Department Administrative Order 213-5. The plan should be in the format specified in Exhibit 7 of the DAO. Should you have any questions regarding the preparation of action plans, please contact me at (202) 482-4661, or Michael Sears, Assistant Inspector General for Auditing, at (202) 482-1934.

We appreciate the cooperation and courtesies your staff extended to us during our review.

Attachment: NTIS Response to OIG Draft Report

cc: Bruce P. Mehlman, Assistant Secretary of Commerce for Technology Policy
Benjamin H. Wu, Deputy Under Secretary for Technology




ATTACHMENT

UNITED STATES DEPARTMENT OF COMMERCE
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161
OFFICE OF THE DIRECTOR

OCT 30 2002

MEMORANDUM FOR: Michael Sears
Assistant Inspector General for Auditing

FROM: 
Ron Lawson
Director

SUBJECT: National Technical Information Service's New
Business Model, Draft Audited Report No. FSD-15100

Thank you for the opportunity to review and comment on your draft report on our new business model. I am very pleased that your auditors appreciated that the driving force behind the adoption of the new model was our desire to generate greater public interest in and access to Federal scientific and technical information. Our prior model limited exposure of our products and services to the institutional research community. I am also pleased that you correctly concluded that the relatively small impact the model is likely to have on our operations over the short run should not prevent its implementation.

I generally agree with all of your specific recommendations. First, you may be assured that future discussions of the new model with policymakers will note that there are uncertainties associated with it. For example, we cannot control the research agenda of the Government and cannot assure that the material coming into our collection at a given time will dovetail with industry's needs at that time. That type of uncertainty is one of the major reasons we want to develop a model that will expose the collection to broader segments of the public.

As to your second and third recommendations, every month I am presented with detailed figures on all of our product and service lines. These figures not only provide updated cost and revenue figures for each of these, but also provide me with the original projections. In other words, we have in place procedures for periodic review of all projections to determine whether they are realistic and feasible (recommendation 2) and how they affect overall impact on our operations (recommendation 3) You may be assured that we will monitor the new model very carefully and make appropriate adjustments when warranted.