G A O

Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

December 21, 2001

The Honorable Stephen A. Perry
Administrator
General Services Administration
1800 F Street NW
Washington, DC 20405

Subject: <u>GSA On-line Procurement Programs Lack Documentation and Reliability Testing</u>

Dear Mr. Perry:

Earlier this year, we conducted a review[1] of small business participation in selected on-line procurement programs in fiscal years 1999 and 2000. During the course of this review, we compared the small business share of procurement dollars awarded by two GSA on-line procurement programs, GSA Advantage! and Information Technology Solutions Shop (ITSS), to the small business share of all federal contract dollars awarded and we assessed the reliability of the data needed for our report.[2] We evaluated the data by (1) performing electronic tests of relevant fields and (2) requesting and reviewing, if available, related program and system design documentation, audit and system reviews, and reports. We determined that the data were reliable enough for the purposes of that report. However, we did identify several errors that GSA needed to correct to more accurately state total sales and small business participation. We also identified serious management control weaknesses related to data reliability as well as GSA's ability to ensure the continuity of the operations for the on-line programs. This letter discusses our concerns and recommends improvement actions.

<u>BACKGROUND</u>

The federal government is taking steps to increase its use of electronic commerce, particularly in the area of conducting on-line procurement. For example, as part of an effort to improve the functioning of the government and achieve efficiencies of operations, the President has requested agencies to expand their use of on-line procurement in fiscal year 2002.[3]

---

[1] *Electronic Commerce: Small Business Participation in Selected On-line Procurement Programs* (GAO-02-1, Oct. 29, 2001).
[2] Generally accepted government auditing standards require that we assess the reliability of any data used to support our findings, conclusions, and recommendations.
[3] OMB Memorandum No. 01-11, Feb. 14, 2001.

GSA Advantage! and ITSS are two systems agencies can turn to for electronic procurements. GSA Advantage! serves as an "electronic mall" in which government buyers can search listings, compare prices, and purchase items on-line. ITSS on-line procurement program is used for larger, complex purchases. Customers enter requirements on-line, GSA staff solicit quotes, issue purchase orders, and authorize payment electronically. GSA administers both Advantage! and ITSS on-line procurement programs. Sales through these two on-line programs have been small but growing. The two on-line programs grew as a percentage of total federal procurement dollars from about one-half percent in fiscal year 1999 to about 1 percent in fiscal year 2000. The table below provides a description of each of the programs.

Table 1: <u>GSA's Advantage! and ITSS Programs: Services, Products, and Sales</u>

Dollars in thousands

			Fiscal year sales	
Program	Services	Products	(Actual) 1999	(Actual) 2000
Advantage!	Web-based catalog ordering system	Over 2 million commercial products and services, many of which are office supplies and information technology products and services	$85,687	$124,892
ITSS	Web-based contracting services	Information technology products and services, from computer monitors to complete network installations	977,472	2,258,709

Source: GAO, based on GSA documentation

It is important that the data in both systems be as accurate and reliable as possible. Government agencies, for example, need to know that pricing data is accurate to make their purchases. Agencies also rely on these systems for summary data on government contracting opportunities, solicitations, awards, etc. The Congress and other oversight entities need to know that data on such things as total sales, agency use, and small business participation is reliable in order to assess the effectiveness of government contracting programs.

<u>LACK OF SYSTEM DOCUMENTATION</u>

GSA program officials told us that they did not have system documentation for either GSA Advantage! or ITSS. Documentation would normally include the data processing or automated aspects of the system (such as application program coding), operating instructions, and system policies, processes, and procedures (such as procedures on "configuration control" or how changes to the system are to be made). Documenting systems is a common management practice and is required of GSA under the Joint Financial

Management Improvement Program's[4] Federal Financial System Requirements to completely document both management systems.

According to GSA Advantage! officials, there is no formal documentation of the system because the system evolved over many years in a piecemeal fashion among many developers –both government and contractors. The Chief Technology Officer for ITSS also said that ITSS was developed without extensive documentation and evolved over time, based on rapid prototyping and deployment. GSA officials told us that they have just started efforts to contract for services to document the systems.

It is important for GSA to take time now to document the overall system. Documenting systems helps organizations ensure the data is reliably collected and entered into a system and that changes made are appropriate and completed in a timely and effective manner. Moreover, by documenting such things as coding and system operations, organizations are better positioned to ensure that they can continue operations in the event of a disaster or emergency. This is especially important for GSA because it relies heavily on contractors to operate and maintain the two systems.

LACK OF DATA ENTRY CONTROLS AND ROUTINE DATA VALIDATION

As part of our reliability assessment, we electronically analyzed data in both GSA Advantage! and ITSS and found significant errors. For example:

- In the case of Advantage!, the database included $32.2 million that represented 16 "test orders", which were used to train and provide demonstrations to users, according to GSA officials. These data were not marked as test cases and their inclusion would have skewed future reports, including small business participation and data extracts. Currently, there is no separate training environment to ensure that test orders are not included with real orders.

- In the case of ITSS, we found that GSA was using an incorrect formula to calculate total sales. As a result, initially fiscal year sales totaled $3.1 billion; as corrected, they summed to $2.3 billion. The ITSS Chief Technology Officer told us that ITSS was not originally designed to provide strong reporting capability. Consequently, those trying to generate reports from the system need a thorough understanding of the data and data queries to obtain correct information.

---

[4] The Joint Financial Management Improvement Program (JFMIP) is a joint undertaking of the US Department of Treasury, the General Accounting Office, the Office of Management and Budget and the Office of Personnel Management, working in cooperation with each other and other agencies to improve financial management practices in Government. JFMIP's guidance covers acquisition systems such as Advantage! and ITSS.

In each case, contract and program officials agreed with our analysis and subsequently corrected the databases and/or reported numbers to reflect more accurate numbers.

The data problems we identified may be attributable to the fact that GSA lacks data entry or edit controls to catch this type of errors and does not periodically validate data. Such controls are considered to be common industry practice since they help ensure that data are accurate and reliable. Although contractors told us that the system was designed to "police itself"—that is, its customers, contracting officials and other agencies would point out errors—the errors we discovered had not previously been brought to GSA's attention. Moreover, GSA officials did not affirm that they would be implementing routine data validation and other safeguards to ensure data accuracy and integrity.

CONCLUSION

GSA's two online procurement systems—GSA Advantage! and ITSS—lack basic management controls to ensure the systems produce reliable data, can not be inappropriately modified, and provide continuous service. These controls are increasingly important since government agencies are expected to increase their use of these systems and GSA relies heavily on contractors for systems operations and maintenance. Moreover, the Congress and other oversight entities need adequate assurance that these systems are reliable and accurate to assess the effectiveness of government contracting programs.

RECOMMENDATIONS FOR AGENCY ACTION

We recommend that the GSA Administrator direct managers responsible for oversight of both GSA Advantage! and ITSS to:

- Fully document the procurement systems in accordance with guidelines for government financial management systems, such as those in JFMIP;

- Establish procedures and deadlines for documenting any future changes to either system;

- Establish procedures to prevent entry of test data into production systems; and

- Develop procedures for periodic examination, validation, and timely correction of GSA Advantage! and ITSS data.

AGENCY COMMENTS

We provided GSA with a draft of this report for review and comments. In oral comments, GSA officials agreed with our recommendations and provided technical comments, which we have incorporated as appropriate. GSA officials also said that even though both systems are being reengineered, the issues we raised continue to be relevant, and that they are initiating actions to address our recommendations. The officials could not estimate when implementation of the recommendations would be complete.

To evaluate the reliability of data provided by contractors and officials responsible for Advantage! and ITSS, we:

- reviewed governmentwide guidance for developing and maintaining management systems;

- reviewed existing agency information such as audit reports by the GSA Inspector General, independent reviews and system documentation, if available;

- performed electronic data testing of relevant fields such as checking for missing data, the relationship of one field to another, values outside of a designated range, and dates outside valid time frames; and

- discussed control weaknesses with officials and contractors.

We conducted our review from April 2001 to September 2001 in accordance with generally accepted government auditing standards. In conducting our review we met with officials at the General Services Administration, and contractors for both Advantage! and ITSS on-line procurement programs.

This report contains recommendations to you. The head of a federal agency is required under 31 U.S.C. 720 to submit a written statement of actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Reform not later than 60 days after the date of this letter and to the Senate and House Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of this letter.

- - - -

We are sending copies of this letter to interested congressional committees. This letter will also be available on GAO's home page at http://www.gao.gov. Please contact me at (202) 512-4841 or Hilary Sullivan at (214) 777-5652 if you or your staff have questions. Major contributors to this report were Barbara Johnson, Rosa M. Johnson, and Beverly Ross.

Sincerely yours,

David E. Cooper
Director, Acquisition
 and Sourcing Management

(120106)