United States General Accounting Office

GAO

Report to Congressional Requesters

November 2001

LOAN MONITORING SYSTEM

SBA Needs to Evaluate Use of Software

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GAO-02-188

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Abbreviations

LMS	loan monitoring system
SBA	Small Business Administration

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United States General Accounting Office
Washington, D.C. 20548

November 30, 2001

The Honorable Donald Manzullo
Chairman, Committee on Small Business
House of Representatives

The Honorable Christopher S. Bond
Ranking Minority Member
Committee on Small Business and Entrepreneurship
United States Senate

The Small Business Reauthorization Act of 1997 mandated planning activities that the Small Business Administration (SBA) is required to complete before it begins to develop a loan monitoring system (LMS). In February 2000, we testified that SBA had made substantial progress in completing the mandated planning actions, and we made recommendations on additional steps needed for each action and for project management and control of LMS. In August 2000, we briefed your staff that SBA had made progress in addressing our LMS-specific recommendations; however, SBA had completed its work on only one recommendation. As you requested, for our current review, we evaluated SBA's actions to develop and implement software for LMS.

To fulfill this objective, we collected and analyzed information and documentation on planning actions that SBA has taken for LMS. We conducted interviews with SBA officials on the processes and methodologies used for planning. We also interviewed SBA officials to identify changes in LMS planning. In addition, we analyzed contract documents and agency records concerning the development and implementation of software for LMS. We conducted our review at SBA headquarters in Washington, D.C., from April 2001 through September 2001, in accordance with generally accepted government auditing standards.

On October 9, 2001, we provided a detailed briefing to your office on the results of this work, which is included in appendix I. The purpose of this letter is to provide the briefing slides to you and to officially transmit our recommendation to the Administrator, Small Business Administration.

In summary, we reported that SBA's actions to develop and implement LMS software were not consistent with the Small Business Reauthorization Act of 1997 and SBA's agreement with the House Committee on Small Business

not to acquire hardware or software before completing the mandated planning. We concluded that these actions could result in significant project cost increases and delays. We made a specific recommendation to address these risks.

Recommendation for Executive Action

We recommend that the Administrator direct the Chief Information Officer to take the actions necessary to bring the LMS project in compliance with the Small Business Reauthorization Act and with SBA's agreement with the House Committee on Small Business. Such actions should include an evaluation of prototype software and documentation in accordance with SBA's system development methodology and generally accepted system development practices. The evaluation should consider the extent to which the software satisfies requirements already identified for the electronic processing of loan guarantee applications; the potential impact of changes in requirements, as business processes and requirements of lender oversight and risk management are identified; and the costs and benefits of alternative courses of action: whether the software should be (1) separated from LMS and implemented, (2) separated from LMS and further modified to meet mission needs, or (3) held in suspense until all LMS requirements and plans have been completed.

Agency Comments

In commenting on a draft of this report (see appendix II for written comments), the Administrator of the Small Business Administration stated that the agency agreed with the recommendation and that he had requested the Office of the Chief Information Officer to implement it.

We are sending copies of this report to the Chairman, Senate Committee on Small Business and Entrepreneurship, and to the Ranking Minority Member, House Committee on Small Business. We are also sending copies of this report to the Director, Office of Management and Budget. Copies will also be made available to others upon request.

Should you or your staff have any questions concerning this report, please contact me at (202) 512-6240. I can also be reached by e-mail at koontzl@gao.gov. Key contributors to this assignment were Nabajyoti Barkakati, James R. Hamilton, E. Randolph Tekeley, and Daniel K. Wexler.

Sincerely yours,

Linda D. Koontz

Linda D. Koontz
Director, Information Management Issues

GAO's October 9, 2001, Briefing on Small Business Administration's Loan Monitoring System

Small Business Administration's Loan Monitoring System

Briefing for Committees on
Small Business, House of Representatives
Small Business and Entrepreneurship, U.S. Senate

October 9, 2001

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Purpose and Outline

- To provide information on SBA's actions to develop and implement software for the loan monitoring system (LMS) that we identified during our evaluation of its activities to complete the planning mandated by the Small Business Reauthorization Act of 1997.
- Outline
  - Objective, Scope, and Methodology
  - Background
  - Software Development
  - Conclusion and Recommendations
  - Agency Comments and Our Evaluation

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Objective, Scope, and Methodology

- Our overall objective was to evaluate SBA's activities to complete the planning mandated by the Small Business Reauthorization Act of 1997. As part of the overall review, we evaluated SBA's actions to develop and implement software for LMS.
- We collected and analyzed information and documentation on SBA's planning actions taken for LMS. We conducted interviews with SBA officials on the processes and methodologies used for planning. We also interviewed SBA officials to identify changes in LMS planning. We analyzed contract documents and agency records concerning the development and implementation of software. We conducted our review at SBA headquarters in Washington, D.C., from April 2001 through September 2001, in accordance with generally accepted government auditing standards.
- On October 4, 2001, we obtained oral comments from SBA officials on a draft of this briefing. Their comments and our evaluation are summarized at the end of this briefing.

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Background

- SBA proposed a loan monitoring system that would use technology and new processes to manage its loan portfolios, identify and effectively mitigate risks incurred through loans guaranteed by SBA, implement oversight of internal and external operations, and calculate subsidy rates.
- The Small Business Reauthorization Act of 1997 required that SBA complete eight mandated planning actions before the agency developed and implemented the proposed new loan monitoring system.
- In July 1998, we testified that while SBA had developed a plan for the LMS project, it faced formidable challenges and risks in establishing project management capability and using new methodologies and practices.[1]

[1] *Small Business Administration: Planning for Loan Monitoring System Has Many Positive Features But Still Carries Implementation Challenges* (GAO/T-AIMD-98-233, July 16, 1998).

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Background (continued)

- In February 2000, we testified[2] that SBA had made substantial progress in completing the mandated planning actions; we made the following recommendations to SBA on the additional steps needed for each action:
  - complete the analyses of benefits and costs of alternatives being considered for each business process identified through SBA's business process reengineering effort, and complete an implementation plan,
  - perform benefit-cost analyses for systems alternatives to increase the probability that SBA will obtain a system that meets its needs at the lowest cost,
  - develop information technology architecture rules and standards for interoperability and maintainability of interrelated systems,

[2] *SBA Loan Monitoring System: Substantial Progress Yet Key Risks and Challenges Remain* (GAO/T-AIMD-00-113, February 29, 2000).

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Background (continued)

- identify high-level requirements for all internal reports and define detailed input and output data elements necessary for the timely generation of reports,
- complete the definition of specific data-quality standards, develop a schedule of planned actions to improve data quality in current systems, and implement data-quality measures,
- define system capacity and performance requirements,
- develop an acquisition strategy to ensure that a sound justification exists for pursuing custom-developed functions, and
- continue to refine the cost-to-completion estimate following the completion of the benefit-cost analysis of alternatives and the selection of the best alternative for implementation, and develop a lifecycle cost estimate for the system and its components.

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Background (continued)

- We also made the following recommendations for key processes that SBA should establish for project management and control:
  - implement project tracking and oversight capabilities,
  - finalize and implement configuration management processes,
  - acquire independent verification and validation for the LMS project,
  - establish an internal quality assurance function, and
  - address the security challenge posed by Internet-based access to LMS functions and data, complete the security architecture, and update the security operating procedure.

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Background (continued)

- SBA testified in February 2000 that it would complete its actions on our recommendations before acquiring hardware or software.
- SBA also testified that, as part of its definition of systems requirements, it planned to develop prototypes for the first increment of LMS, including
  - electronic processing of Preferred Lender program guarantee applications,
  - electronic processing of Low Documentation program guarantee applications, and
  - a partner identification and management system (PIMS).[3]

[3] SBA planned for PIMS to maintain lender identification information including addresses, contact points, program participation, and organizational changes that would be used by the electronic loan guarantee applications in granting authority to process transactions and access to records.

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Background (continued)

- Prototyping is a technique that can be used to test the feasibility of an approach and validate requirements. After completing prototyping, an evaluation is performed to determine if software should be developed. If a decision is made to develop software, the prototype software is evaluated to determine if part or all of it can be used in the subsequent effort to develop production software.
- SBA contracted for the development of the prototype software and definition of requirements. SBA's contractors completed their requirements definition activities before the end of July 2000 for the Preferred Lender program and PIMS. The requirements definition activities for the Low Documentation program were completed in October 2000.
- In August 2000, we briefed your committees that SBA had made progress in addressing our LMS-specific recommendations. However, SBA had completed actions only on the recommendation concerning the development of architecture rules and standards for interoperability and maintainability.

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Software Development

- After meeting the declared purpose of using the prototypes to define requirements for electronic processing of guarantee applications, SBA continued developing software.
  - SBA issued 5 contracts and 8 changes for work on the electronic loan guarantee application software including consolidating preferred lender program and low documentation program prototype software, correcting deficiencies identified from user testing, adding functionality, implementing database redesigns, and enhancing security.
  - SBA issued 4 contracts and 4 changes for work on the PIMS software to correct deficiencies identified from user testing and improve performance.
  - Work on the electronic loan guarantee application and PIMS software was extended by more than 16 months, and contract costs increased by about $1 million.

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Software Development (continued)

- SBA implemented the electronic loan guarantee application and PIMS software.
  - The electronic loan guarantee application software was initially placed in production in November 2000 for use in pilot tests; 6 modifications to the software have been installed since then. Through September 13, 2001, SBA processed about 100 transactions with the electronic loan guarantee application software.
  - PIMS software was placed in production in October 2000 for use in pilot tests; 9 modifications to the software have been installed since then.
- SBA developed and implemented the electronic loan guarantee application and PIMS software even though it had agreed not to acquire hardware or software before completing planning mandated by the Small Business Reauthorization Act of 1997.

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Software Development (continued)

- Implemented software may need further revisions as lender oversight and risk management business processes are established and requirements defined.
  - After SBA established the Office of Lender Oversight in September 2000, it recognized the need to further define the business processes for risk management and lender oversight.
  - The Office of Lender Oversight has recognized the need for additional benchmarking with industry practices and assessments of available commercial systems for risk management and lender oversight.
  - SBA plans to undertake studies over a 6 month period to define the processes it will use for risk management and lender oversight and assess available commercial systems. These new processes may require the collection of additional data, resulting in revisions to the electronic loan guarantee application software.

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Conclusion and Recommendation

Conclusion

- The development and implementation of software was not consistent with the Small Business Reauthorization Act of 1997 and SBA's agreement not to acquire hardware or software before completing the mandated planning. These actions could result in significant project cost increases and delays if the definition of business processes and requirements for risk management and lender oversight necessitate the revision of the system design, restructuring of the database, and modifications to the software.

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Conclusion and Recommendation (cont'd)

Recommendation

- We recommend that the Administrator direct the Chief Information Officer to take the actions necessary to bring the project in compliance with the Small Business Reauthorization Act. Such actions should include an evaluation of prototype software and documentation in accordance with SBA's system development methodology and generally accepted system development practices.
  - The evaluation should consider the extent the software satisfies requirements already identified for the electronic processing of loan guarantee applications, the potential impact of changes in requirements as business processes and requirements of lender oversight and risk management are identified, and the costs and benefits of alternative courses of action: whether the software should be (1) separated from LMS and implemented, (2) separated from LMS and further modified to meet mission needs, or (3) held in suspense until all LMS requirements and plans have been completed.

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Agency Comments and Our Evaluation

Agency Comments

- In commenting on a draft of this briefing, SBA officials, including the Associate Deputy Administrator for Capital Access and the Chief Information Officer, said that work on the prototypes was not in violation of the law because
  - SBA has completed all planning actions mandated by the Small Business Reauthorization Act of 1997, and
  - SBA's ongoing work on the electronic loan guarantee application was a continuation of the prototype effort and was therefore not software development. The electronic loan guarantee application was implemented as a pilot test that was limited to a few lenders and loan programs; therefore the prototypes were not implemented in full production.
- However, SBA did agree that the recommendation was a reasonable course of action.

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Agency Comments and Our Evaluation (cont'd)

Our Evaluation

- We disagree with SBA's contention that it has completed the planning actions mandated by the Small Business Reauthorization Act of 1997. SBA plans to undertake studies to define processes it will use for risk management and lender oversight and the results are to be used to complete the definition of LMS requirements. After requirements are defined, SBA will need to complete associated plans and analyses required by the 1997 Act, such as the analyses of system alternatives and cost to completion.
- SBA's position that it was prototyping and not developing software because the resulting software has been used only in limited production is inconsistent with its own system development methodology. Key indicators that SBA has been developing software are (1) the continuation of work on the software after meeting the declared purpose of defining requirements and (2) the use of software in production.

(310324) 15

Comments From the U.S. Small Business Administration

U.S. SMALL BUSINESS ADMINISTRATION
WASHINGTON, D.C. 20416

NOV 16 2001

OFFICE OF THE ADMINISTRATOR

Mr. Joel Willemssen
Managing Director, Information Technology Issues
U.S. General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Willemssen:

The U.S. Small Business Administration (SBA) thanks you for the opportunity to review and comment on the General Accounting Office (GAO) draft report entitled, *SBA Loan Monitoring System – SBA Needs to Evaluate Use of Software,* GAO-02-188. We are fully committed to meeting the requirements of the Small Business Reauthorization Act and the Agency agrees with the recommendation. I have requested that the SBA Chief Information Officer, Lawrence E. Barrett, ensure that the prototypes are evaluated as soon as possible.

If you require additional information, please contact Lawrence E. Barrett at (202) 205-6708.

Sincerely,

Hector V. Barreto
Administrator

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