



**U.S. SMALL BUSINESS ADMINISTRATION
OFFICE OF INSPECTOR GENERAL
WASHINGTON, D.C. 20416**

Memorandum Report
Audit No. 16-16

DATE: June 7, 2016

TO: Matthew Varilek
Chief Operating Officer
Office of the Chief Operating Officer

Keith A. Bluestein
Deputy Chief Information Officer
Office of the Chief Information Officer

FROM: Troy M. Meyer
Assistant Inspector General for Audit

SUBJECT: *Weakness Identified During SBA's Office 365 Cloud Email Migration*

This memorandum presents the results of our evaluation of the Small Business Administration's (SBA) Office 365 cloud email migration. The objective of our evaluation was to determine whether SBA's Office 365 cloud email migration follows applicable Federal guidance and standards, such as those outlined in the Federal Risk and Authorization Management Program (FedRAMP).

We previously furnished copies of the draft memorandum and requested written comments on the recommendations. SBA management's comments are appended and were considered in finalizing this memorandum.¹ The memorandum contains five recommendations that SBA generally agreed to address. However, we noted that management's response to recommendation 5 only addressed the status of the Office 365 cloud email migration, rather than the reporting controls for all SBA IT investments on the Federal IT dashboard. Please provide us within 90 days your progress in addressing the recommendations.

Background

Cloud computing allows users to access and use shared data and computing services. The cloud also provides users access to resources without having to build an infrastructure to support these resources within their own environments or networks. Consequently, cloud computing has generally been described as "renting" storage on another server.² With the cloud, organizations can measure the information technology (IT) resources used and appropriately pay for them. Organizations can also increase or decrease their storage to match requirements and budget constraints.³

¹ SBA's comments can be found in Appendix II.

² National Archives and Records Administration (NARA) Bulletin 2010-05, *Guidance on Managing Records in Cloud Computing Environments*, no. 3 (September 8, 2010).

³ Office of Management and Budget (OMB), *Federal Cloud Computing Strategy*, Executive Summary (February 8, 2011).

According to Office of Management and Budget (OMB) guidance, by December 31, 2016, all Federal agencies must retain and manage email records in an appropriate electronic system.⁴ This system must support records management and litigation requirements (such as information for the Freedom of Information Act (FOIA) requests, subpoenas, investigations, etc.), including the capability to identify, retrieve, and retain records for as long as they are needed.^{5, 6} Furthermore, in 2010, OMB began issuing guidance to encourage Federal agencies to use a “Cloud First policy.” This policy requires agencies to evaluate cloud computing options prior to making any new IT investments.⁷

Office 365 is a platform which allows user emails to be accessed anywhere and stored in a common cloud environment. In September 2015, SBA started the Office 365 cloud email migration project, which will move its email system off of the on-premises SBA email servers to Office 365’s cloud-based system and decommission the old environment when possible. According to the project’s statement of work, the Office of the Chief Information Officer (OCIO) is to provide project oversight. Additionally, a contractor was awarded a firm-fixed price contract for \$595,242 issued on September 11, 2015, to manage the migration to the cloud environment, with an anticipated completion date of March 10, 2016.^{8, 9} The Office 365 cloud email migration must satisfy two important considerations: Capstone and FedRAMP requirements.

Capstone Archiving Approach

The U.S. National Archives and Records Administration issued guidance to agencies regarding a records management approach known as “Capstone” for managing Federal record emails electronically. Capstone policy categorizes email based on the work and position of the email account owner. This approach assists in determining which records should be permanently preserved.¹⁰ SBA has adopted the Capstone approach and created a working group to develop a Capstone auto archive policy and integrate related requirements from this effort into the Office 365 cloud email project.

FedRAMP

FedRAMP provides a cost-effective, risk-based approach for adopting and using cloud services. FedRAMP standardizes security requirements for authorizing ongoing cloud services cybersecurity and provides contracting language to help executive departments and agencies integrate FedRAMP requirements into cloud service acquisitions. FedRAMP supports the mandate that U.S. Federal information systems comply with the Federal Information Security Management Act of 2002 (FISMA).¹¹

⁴ OMB Memorandum M-12-18, *Managing Government Records Directive*, Part I, no. 1.2 (August 24, 2012).

⁵ OMB Memorandum M-12-18, *Managing Government Records Directive*, Part I, no. 1.2 (August 24, 2012).

⁶ Under the Freedom of Information Act (FOIA), agency records can include emails and thus such records must be available to be searched in response to a FOIA request.

⁷ OMB *25 Point Implementation Plan to Reform Federal Information Technology Management*, Introduction (December 9, 2010); OMB, *Federal Cloud Computing Strategy*, Executive Summary (February 8, 2011).

⁸ According to OMB Memorandum M-10-27, *Information Technology Investment Baseline Management Policy*, Footnote 4 (June 28, 2010), the Office 365 cloud email migration project should be considered a major IT investment because of its importance to the Agency; the investment has been annually funded for more than \$500,000; there are significant program or policy implications; and this investment has high executive visibility.

⁹ A contract amendment to extend the Office 365 cloud email migration timeline was issued on April 19, 2016 for \$293,456. The project’s anticipated completion date is now August 19, 2016.

¹⁰ NARA Bulletin 2013-02: *Guidance on a New Approach to Managing Email Records*, no. 2 (August 29, 2013).

¹¹ At the time of this report, the Office 365 cloud email migration project did not progress to the stage where the OIG could determine if the Office 365 cloud email was FedRAMP compliant.

Objective

Our objective was to determine whether SBA's email cloud migration to Office 365 follows applicable Federal guidance and standards, such as those outlined in FedRAMP.¹²

Results

We found that the Office 365 cloud email migration has multiple risk areas that should be addressed by the OCIO project team and the Capstone working group. First, the Capstone working group did not take preparatory steps to develop an archive policy or establish testing plans to ensure the project meets Capstone requirements. Additionally, because the project has experienced significant delays, OCIO will need to evaluate whether to continue, modify or terminate the project. Furthermore, SBA needs to report the project's status accurately and timely. Due to a lack of planning and oversight, the Agency has exceeded anticipated timelines without deploying a system that meets OMB deadlines and guidance.

Archive Policies

During our evaluation of the Office 365 cloud email migration, we found that SBA has not defined archive requirements for the design, operation, and migration of Office 365 cloud email that comply with Capstone or OMB guidance. OMB requires that new systems consider applicable records management policies and procedures, including requirements for archiving information maintained in electronic format, particularly when planning, designing, and operating information systems.¹³ However, SBA's auto archive policy retention has been placed on hold until after the initial cloud email migration. The Capstone working group, which is responsible for developing a Capstone auto archive policy, has not met since October 20, 2015.

In the absence of a revised email archiving policy, SBA will revert to its existing records management, which states that if an email pertains to official records, it should be copied and filed, like a paper record.¹⁴ The proposed archive solution is to retain SBA's existing email environment, and utilize the cloud to process future emails in the Office 365 environment. Consequently, future archive requests would likely require queries into both the existing on-premise and post-migration environments. However, the Capstone working group has not put forth a formal archive requirement. In light of OMB's December 31, 2016 deadline, it is crucial that the Capstone working group meet to develop guidance to manage email records in an electronic format, per OMB requirements.¹⁵

Testing Cases Against Project Requirements

According to SBA System Development Methodology, testing should be performed throughout the project to ensure critical functional requirements are identified, designed, built, and tested before the system is accepted.¹⁶ Without records retention guidelines and related testing, necessary archives may not be electronically accessible by Agency or outside stakeholders, such as the Office

¹² Detail of our scope and methodology can be found in Appendix I.

¹³ OMB Circular A-130 Revised, *Management of Federal Information Resources*, no. 9, Assignment of Responsibilities (h) (November 28, 2000).

¹⁴ SBA SOP 00 41 2, *Records Management Program*, section 7 (December 1, 1998).

¹⁵ OMB M-12-18, *Managing Government Records Directive*, Part I, no. 1.2 (August 24, 2012).

¹⁶ SBA System Development Method 2.1, Introduction (June 24, 2009).

of General Counsel or third-party FOIA requests.¹⁷ As previously noted, OCIO plans to retain the existing email application and operate it separately from the Office 365 cloud email environment. However, we have not seen sufficient testing plans to validate this approach. SBA has not developed testing procedures, but according to the Acting Chief Information Officer (CIO) and project manager, once the Capstone working group establishes an archive plan and related requirements, the project manager plans to implement and test them.

SBA's system development method requires complete user acceptance testing, which allows the project owner to confirm key requirements and functionality has been delivered. We are recommending that OCIO complete a requirements traceability matrix and use system development methodology as well as develop acceptance testing procedures that meet stakeholder requirements.¹⁸

Project Oversight

The project experienced significant delays that may affect the viability of the project as a whole. Specifically, the contractor had to wait until mid-February 2016 to begin migration testing and migration—a 4-month delay from the original schedule of October 19, 2015. Since the delay has taken almost as long as the project's initial timeline, we have concluded that the testing delay has caused almost a 100 percent project schedule variance. According to SBA guidance, projects must be re-baselined when the project's cost or schedule variance throughout the lifecycle of the project are outside of a tolerant range of +/-10 percent.¹⁹

In the event that SBA continues to fund the Office 365 cloud email migration, OCIO should have a face-to-face, evidence-based accountability review of an IT program with OMB and agency leadership known as a TechStat session.²⁰ Such sessions identify areas significant to the project's health and stability, and would enable SBA to either turn around the underperforming Office 365 project, or terminate the project if appropriate.²¹ The Agency is required to contact OMB two weeks prior to a TechStat session and submit the results in the Integrated Data Collection reporting instrument.²² Based on the TechStat session, the CIO determines if a project should continue or be terminated. OCIO held a TechStat session on SBA's overall infrastructure investment in June 2015.²³ While the Office 365 cloud email migration is a component of SBA's overall Infrastructure investment, the project start was initiated after the TechStat session. Moreover, the Office 365 cloud email migration is a major IT investment necessary to meet Federal guidance and conduct governmental operations. Consequently, we believe that the Office 365 cloud email migration

¹⁷ Under FOIA, agency records can include emails and thus such records must be available to be searched in response to a FOIA request.

¹⁸ SBA *System Development Method*, section 3 (June 24, 2009) states a traceability matrix ensures critical functional requirements were identified, designed, built, and tested before the system was accepted for production.

¹⁹ SBA SOP 90 52, *IT Investment Performance Baseline Management (PBM) Policy*, section 6 (May 9, 2011).

²⁰ SOP 90 52, *IT Investment Performance Baseline Management (PBM) Policy*, section 5 (May 9, 2011) states that these sessions should be used to identify risk mitigation, action, and methods to address weaknesses, and reduce current spending or resources that includes re-baselining.

²¹ OMB *25 Point Implementation Plan to Reform Federal Information Technology Management*, Part II, section D (December 9, 2010) requires Federal agencies to establish TechStat sessions on troubled investments on an on-going basis.

²² OMB Memorandum M-13-09, *Fiscal Year 2013 PortfolioStat Guidance: Strengthening Federal IT Portfolio Management, Streamlining of Agency Reporting*, section 3 (March 27, 2013) established an Integrated Data Collection (IDC) channel for agencies to quarterly report progress in how they are meeting IT strategic goals, objectives and metrics as well as cost savings and avoidances resulting from IT management actions.

²³ The FY 2016 *IT Budget-Capital Planning Guidance*, General, no. 5 (May 23, 2014) states infrastructure components may involve multiple agency mission areas and include end-user systems and support; mainframes and servers services and support; and telecommunications services and support.

requires a TechStat session to address remaining project risks. After the TechStat, OCIO can re-baseline, which would provide a basis for assessing the project and develop solutions.²⁴

An additional project schedule slippage resulted when OCIO temporarily suspended the Office 365 cloud email migration. This project's initial timeline was from September 11, 2015 to March 10, 2016. When the original contract to implement Office 365 expired on March 10, 2016, OCIO did not have additional funding to pay for a contract extension. As a result, OCIO suspended the mission-critical IT project for approximately 4 weeks and only recently obtained additional funding.²⁵

Reporting Project Status

We found that OCIO has not accurately or timely reported the status of the Office 365 cloud email migration. OMB guidance states that the CIO is directly accountable for tracking the performance and conducting oversight of all of SBA's IT investments through the Federal IT dashboard.²⁶ The Federal IT dashboard is used to provide Federal agencies and the public the ability to view details of Federal IT investments online. Agencies are required to report risks, performance metrics, project, and activity data for major IT investments to the dashboard as soon as the data becomes available, or at least once each calendar month.²⁷ As of March 31, 2016, SBA has not updated the dashboard to establish any changes in project status, schedule status, or schedule variances. The CIO should have updated the dashboard as soon as the original timeline ended and funding was not available. Our office recommends the CIO ensure the data reported is accurate and timely.²⁸

Recommendations

We recommend that the SBA Capstone working group:

1. Develop and issue guidance on email archiving procedures for the Office 365 cloud email migration.

We recommend that the Office of the Chief Information Officer:

2. Develop and utilize a requirements traceability matrix to document user acceptance of the Office 365 cloud email migration testing in accordance with SBA's system development method.

²⁴ FY 2016 IT Budget-*Capital Planning Guidance*, Major IT Business Case, no. 15 (May 23, 2014); SBA SOP 90 52, *IT Investment Performance Baseline Management (PBM) Policy*, section 5 (May 9, 2011).

²⁵ A contract amendment to extend the Office 365 cloud email migration timeline was issued on April 19, 2016 for \$293,456. The project's anticipated completion date is now August 19, 2016.

²⁶ OMB Memorandum M-10-27, *Information Technology Investment Baseline Management Policy*, Appendix A, section III (June 28, 2010) states that the CIO shall update the Federal IT dashboard within 30 days with the current agency approved baseline.

²⁷ OMB Memorandum M-15-14, *Management and Oversight of Federal Information Technology*, Section C: Transparency, Risk Management, Portfolio Review, and Reporting (June 10, 2015).

²⁸ SBA is supposed to provide updates of risks, performance metrics, project, and activity data for major IT investments to the dashboard as soon as the data becomes available, or at least once each calendar month. If OMB or the agency CIO determine data reported to the Federal IT dashboard is not timely and reliable, the agency must notify OMB and establish within 30 days of this determination an improvement program to address the deficiencies according to OMB Memorandum M-15-14, *Management and Oversight of Federal Information Technology*, Section C: Transparency, Risk Management, Portfolio Review, and Reporting (June 10, 2015).

3. Obtain procedures relating to archiving records that encompass requirements of key stakeholders and incorporate guidelines of OMB Memorandum M 12-18, *Managing Government Records Directive*.
4. Deploy project oversight methods implemented in SBA Standard Operating Procedure 90 52, *IT Investment Performance Baseline Management (PBM) Policy*, to ensure that proper project oversight is performed.
 - a) Have a TechStat session for the Office 365 cloud email migration and determine if the project should continue or end. Report the TechStat session results to OMB through the Integrated Data Collection.
 - b) Once a determination has been made, re-baseline in accordance with SBA Standard Operating Procedure 90 52, *IT Investment Performance Baseline Management (PBM) Policy*.
5. In accordance with OMB Memorandum M-15-14, *Management and Oversight of Federal Information Technology*, determine whether the data reported to the Federal IT dashboard is timely and reliable. If deficiencies are identified, immediately notify the Office of Budget and Management through the Integrated Data Collection within 30 days.

Summary of Actions Necessary to Close the Report

SBA management provided formal comments that are included in their entirety in Appendix II. SBA agreed with our five recommendations, and its planned actions resolve four recommendations. One recommendation action is partially responsive. The following provides the status of each recommendation and the necessary action to either resolve or close the recommendation.

Office of the Chief Operating Officer, Capstone working group

1. **Resolved.** This recommendation can be closed once the Office of the Chief Operating Officer Records Management Division's Capstone working group provides retention policy and guidance for electronic messaging and obtains SBA and NARA approvals.

Office of Chief Information Officer

2. **Resolved.** OCIO proposed final action of this recommendation by July 29, 2016. This recommendation can be closed when OCIO provides our office with a requirements traceability matrix documenting user acceptance of the Office 365 email migration testing in accordance with SBA's system development method.
3. **Resolved.** OCIO will incorporate the Capstone working group's retention policy and guidance for electronic messaging into Office 365 cloud email after it is approved by SBA and NARA officials. This recommendation can be closed once OCIO provides documentation that the requirements of key stakeholders and guidelines of OMB Memorandum M 12-18, *Managing Government Records Directive*, have been incorporated in Office 365 cloud email.

4. **a) Resolved.** OCIO proposed implementing this recommendation by May 31, 2016. This recommendation can be closed once OCIO provides a TechStat session results memorandum and verification that TechStat session action items were reported to OMB through the Integrated Data Collection.

b) Resolved. OCIO proposed implementing this recommendation by May 31, 2016. This recommendation can be closed once OCIO provides the project re-baseline and verification that the agency has updated the project status, cost, and schedule on the Federal IT dashboard.
5. **Resolved.** OCIO responded that the latest submission to the Federal IT dashboard will reflect the current status of the Office 365 cloud email migration's schedule and cost. However, this response does not consider the overall process of reporting information to the Federal IT dashboard. This recommendation requires OCIO to make a determination if all project data reported to OMB through the Federal IT dashboard is timely and reliable in accordance with OMB Memorandum M-15-14, *Management and Oversight of Federal Information Technology*. This report identified that because of project delays, OCIO has not accurately reported the status of the Office 365 cloud email migration to the Federal IT dashboard. The CIO is responsible for ensuring information reported to OMB through the dashboard is reliable. Consequently, to close this recommendation, we believe the final action related to this recommendation should address how OCIO is validating that reporting controls are in place. These controls must ensure timely and accurate information regarding the status of IT investment projects is reported.

Please contact us if you would like to discuss this memorandum or any related issues.

cc: Maria Contreras-Sweet, Administrator
Douglas Kramer, Deputy Administrator
Nicolas Maduros, Chief of Staff
Melvin F. Williams, Jr., General Counsel
Martin Conrey, Attorney Advisor, Legislation and Appropriations
Tami Perriello, Associate Administrator for Performance Management
and Chief Financial Officer
LaNae Twite, Director, Office of Internal Controls

Appendix I: Scope, and Methodology

Our objective was to determine whether SBA's cloud email migration to Office 365 follows applicable Federal guidance and standards, such as those outlined in FedRAMP. The scope of our analysis included migrating and testing Office 365 cloud email and related project oversight practices between November 2015 and March 2016. Our review areas included:

- contract requirements,
- FedRAMP,
- archiving guidance, and
- project oversight.

To answer our objective, we interviewed and requested relevant documentation from OCIO and the Office 365 contractor. We reviewed OMB polices, Federal Acquisition Regulations, and SBA guidance. We also contacted Microsoft officials to determine if Office 365 cloud email met FedRAMP standards. However, the SBA Office 365 cloud email migration was still in the final design phase, and we were unable to make a full determination as to whether all Federal guidance was met.

Our methodology was based on the need for Federal agencies to manage all email records in an electronic format by December 31, 2016.²⁹ Our office had concerns that SBA adopted the Capstone approach for email archiving but had not finalized their policies during the Office 365 cloud email migration and would not be able to incorporate the archiving guidance into the system. While we were conducting this review, other concerns and delays occurred that met the objectives of our evaluation. We reported on these issues in the results section.

We conducted this evaluation in accordance with the Council of the Inspectors General on Integrity and Efficiency's (CIGIE) quality standards for inspection and evaluation. Those standards require that we adequately plan and perform the evaluation to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objectives. We believe that the evidence obtained provides a reasonable basis for our conclusions based on our objectives.

Prior Work

The United States Government Accountability Office (GAO) issued a follow-up report on cloud computing to assess selected agencies' progress in using such services and determine the extent to which the agencies have experienced cost savings.³⁰ GAO reviewed seven agencies and found that since their last review in 2012, the agencies had implemented additional cloud computing services. By increasing their IT budgets for cloud computing by 1 percent, they were able to report cost savings of about \$96 million. This report recommended agencies ensure that all IT investments are assessed for suitability for migration to a cloud computing service and establish evaluation dates for those investments identified in this report that have not been assessed for migration to the cloud.

Additionally, CIGIE reported that the Federal Government's cloud initiatives for 19 agencies found that agencies had not fully considered and implemented existing Federal guidance, policies, and

²⁹ OMB M-12-18, *Managing Government Records Directive*, Part I, no. 1.2 (August 24, 2012).

³⁰ Report GAO-14-753, *Cloud Computing Additional Opportunities and Savings Need to Be Pursued* (January 2012).

best practices.³¹ CIGIE recommended that OMB (1) establish standardized contract clauses that agencies must use when adopting cloud computing technologies, (2) determine how best to enforce FedRAMP compliance, (3) establish a process and reporting mechanism to ensure Federal agencies require CSPs to meet the FedRAMP authorization requirements in a timely manner, and (4) incorporate routine reviews of agency information system inventories into the continuous monitoring process.

³¹ CIGIE, *The Council of the Inspectors General on Integrity and Efficiency's Cloud Computing Initiative* (September 2014).

**SBA
OFFICE OF THE CHIEF INFORMATION OFFICER'S
RESPONSE TO EVALUATION MEMORANDUM**



U.S. SMALL BUSINESS ADMINISTRATION
WASHINGTON, DC 20416

DATE: May 24, 2016

TO: Troy Meyer
Assistant Inspector General Audit
Office of the Inspector General

FROM: Keith A. Bluestein, CISSP
Deputy Chief Information Officer
Office of the Chief Information Officer (OCIO)

SUBJECT: Response: Weakness Identified During SBA's Office 365 Cloud Email Migration

Thank you for the opportunity to respond on the draft report entitled, "Weakness Identified During SBA's Office 365 Cloud Email Migration". We have carefully reviewed the draft and agree with all findings and recommendations. Please refer to the attachments (1824s) for further details on our planned corrective actions for the recommendations.

We are pleased to report successful completion regarding recommendation 4.a and are in the process of completing 1, 2, 3 4.b and 5:

1. Develop and issue guidance on email archiving procedures for the Office 365 cloud email migration.
 - The mission of the "Capstone Workgroup" is to develop and propose retention policy and guidance for electronic messaging. The Records Management Division will seek SBA and NARA approvals. Actual archiving procedures are a technical function of the applications and systems performed by the OCIO.
2. Develop and utilize a requirements traceability matrix to document user acceptance of the Office 365 cloud email migration testing in accordance with SBA's system development method.
 - A requirements traceability matrix document will be created to document user acceptance of the Office 365 cloud migration testing and submitted for closure.
3. Obtain procedures relating to archiving records that encompass requirements of key stakeholders and incorporate guidelines of OMB Memorandum M 12-18, Managing Government Records Directive.
 - As discussed in Recommendation #1, the Records Management Division will seek SBA and NARA approvals. Actual archiving procedures are a technical function of the applications and systems performed by the OCIO.

4. Deploy project oversight methods implemented in SBA Standard Operating Procedure 90 52, *IT Investment Performance Baseline Management (PBM) Policy*, to ensure that proper project oversight is performed.

- a) Have a TechStat session for the Office 365 cloud email migration and determine if the project should continue or end. Report the TechStat session results to the Office of Management and Budget through the Integrated Data Collection.

4. Deploy project oversight methods implemented in SBA Standard Operating Procedure 90 52, *IT Investment Performance Baseline Management (PBM) Policy*, to ensure that proper project oversight is performed.

- b) Once a determination has been made, re-baseline in accordance with SBA Standard Operating Procedure 90 52, *IT Investment Performance Baseline Management (PBM) Policy*.

5. In accordance with OMB Memorandum M-15-14, *Management and Oversight of Federal Information Technology*, determine whether the data reported to the Federal IT Dashboard is timely and reliable. If deficiencies are identified, immediately notify the Office of Budget and Management through the Integrated Data Collection within 30 days.

On May 12, 2016 we held a TechStat session with the Office 365 project manager, agency leadership, the Office of Management and Budget (OMB) and SBA Office of Inspector General (OIG) to discuss an analysis of the project and to determine how best to proceed. The final disposition was to continue with the project with an accelerated approach and additional governance. It was also decided to re-baseline the project schedule and report via the OMB IT Dashboard the latest status. Both items have been worked and will be shared with OIG via the 1824 process shortly. We appreciate your review of this project and believe your recommendations will ensure the project is ultimately successful. If you have any questions, please contact me at (202) 205-0070.



Attachments:

SBA Form 1824, Recommendation Action Sheet (5)