DIA Information Technologies Project Life Cycle Process
Performance Audit

August 2015

Office of the Auditor
Audit Services Division
City and County of Denver

Timothy M. O'Brien, C.P.A.
Auditor

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Timothy M. O'Brien, C.P.A.
     Auditor

August 20, 2015

Ms. Kim Day, Manager of Aviation
Department of Aviation
City and County of Denver

Dear Ms. Day:

Attached is our audit of the DIA Information Technologies Project Life Cycle Process. The purpose of the audit was to examine and evaluate the project life cycle used by the DIA Technologies Division to determine whether the process delivers quality services, enhancements, or applications that satisfy the needs of customers and meets business expectations.

The audit found that administration over the project management process can be improved to increase the continued success for all types of information technology projects.

If you have any questions, please call Kip Memmott, Director of Audit Services, at 720-913-5000.

Sincerely,

Timothy M. O'Brien, C.P.A.
Auditor

TMO/sk

cc: Honorable Michael Hancock, Mayor
       Honorable Members of City Council
       Members of Audit Committee
       Ms. Cary Kennedy, Deputy Mayor, Chief Financial Officer
       Ms. Janice Sinden, Chief of Staff
       Mr. David P. Edinger, Chief Performance Officer
       Ms. Beth Machann, Controller
       Mr. Scott Martinez, City Attorney
       Ms. Janna Young, City Council Executive Staff Director
       Mr. L. Michael Henry, Executive Director, Board of Ethics

To promote open, accountable, efficient and effective government by performing impartial reviews and other audit services that provide objective and useful information to improve decision making by management and the people. We will monitor and report on recommendations and progress towards their implementation.

AUDITOR'S REPORT

We have completed an audit of the Information Technologies Project Management Life Cycle for Denver International Airport (DIA). The purpose of the audit was to evaluate the current project management tools and techniques associated with the success of information technology projects at DIA.

This performance audit is authorized pursuant to the City and County of Denver Charter, Article V, Part 2, Section 1, *General Powers and Duties of Auditor*, and was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The audit assessed the DIA Technologies Division's (DIA Technologies') use of the Information Technology Infrastructure Library (ITIL), which is the common framework used to manage information technology solutions for an organization. The concept behind this best practice is to manage the key elements of project management transition, from initialization to release and closure of an information technology project. Additionally, we reviewed DIA Technologies' project life cycle process based on the Project Management Body of Knowledge (PMBOK), which represents industry standard guidelines for managing projects.

The audit found that the processes and tools implemented by DIA Technologies' Project Management Office (PMO) have enabled DIA Technologies to successfully handle an increasing project work load. However, management needs to take further action to ensure that all areas of the project life cycle are adhered to uniformly.

We extend our appreciation to DIA Technologies and the personnel who assisted and cooperated with us during the audit.

Audit Services Division

Kip Memmott, MA, CGAP, CRMA
Director of Audit Services

DIA Information Technologies Project Life Cycle Process
August 2015

The audit assessed the effectiveness of Denver International Airport's (DIA's) information technology project management processes.

Background

DIA's Project Management Office was revamped in 2010 combining portfolio management with project management to establish additional support for prioritizing, monitoring, and controlling projects to focus on delivering projects on time, within scope, and with improved customer satisfaction. In addition, the Project Management office has implemented tools that assist in keeping projects on track and maintaining all aspects of project information. As the airport grows, so does the number of Information Technology (IT) related projects, which vary in size and complexity. For DIA to remain a strong global competitor, the DIA Technologies Division's Project Management Office must maintain current technology and implement new technologies to ensure that travelers have a satisfactory airport experience.

Purpose

The objective of the audit was to assess opportunities for further developing and maturing the project management life cycle process at DIA.

Highlights

The audit found that the processes and tools implemented by the Project Management Office (PMO) within DIA's Technologies Division (DIA Technologies) have enabled DIA Technologies to successfully handle an increasing project work load. However, management must take further action to ensure that all areas of the project life cycle are adhered to uniformly. DIA Technologies' adoption of the best practice framework Information Technology Infrastructure Library (ITIL) has provided increased structure and guidance to project managers to achieve desired project objectives.

The implementation of the ITIL service transition strategy creates a roadmap that aligns the delivery of IT services and projects with business needs and objectives. While this framework has resulted in more efficient and effective project management, there are some areas that need to be strengthened. Specifically:

- All project information needs to be centrally located and accessible to responsible parties.
- Management should provide further training to staff regarding how to recognize and respond to significant project deviations.
- A complete and thorough documentation of lessons learned should be performed prior to project close out to identify areas for improvement.

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INTRODUCTION & BACKGROUND

Information Technology Project Management

An Information Technology (IT) project is a temporary collaborative effort designed to create a unique product, service, or solution related to technology. Projects are temporary because each project has a definite beginning and end. Projects can be complex, such as an upgrade of an entire network that involves multiple teams, third-party vendors, and different technologies and spans several months or years. Alternatively, a simple project to enable a feature within an established application might be completed in a short time frame and require few resources. Because IT projects can be costly, it is important that they are completed as effectively and efficiently as possible.

Ensuring a successful outcome for projects depends on three competing factors, which are collectively known as the Triple Constraint. The three elements are cost, time, and scope. If any one of these elements is unbalanced, project quality will be affected. The triangle in Figure 1 illustrates the concept of the Triple Constraint. If one side is altered, it will affect the other sides. For example, if the time of the project schedule is impractical, then the cost and scope of the project will suffer.
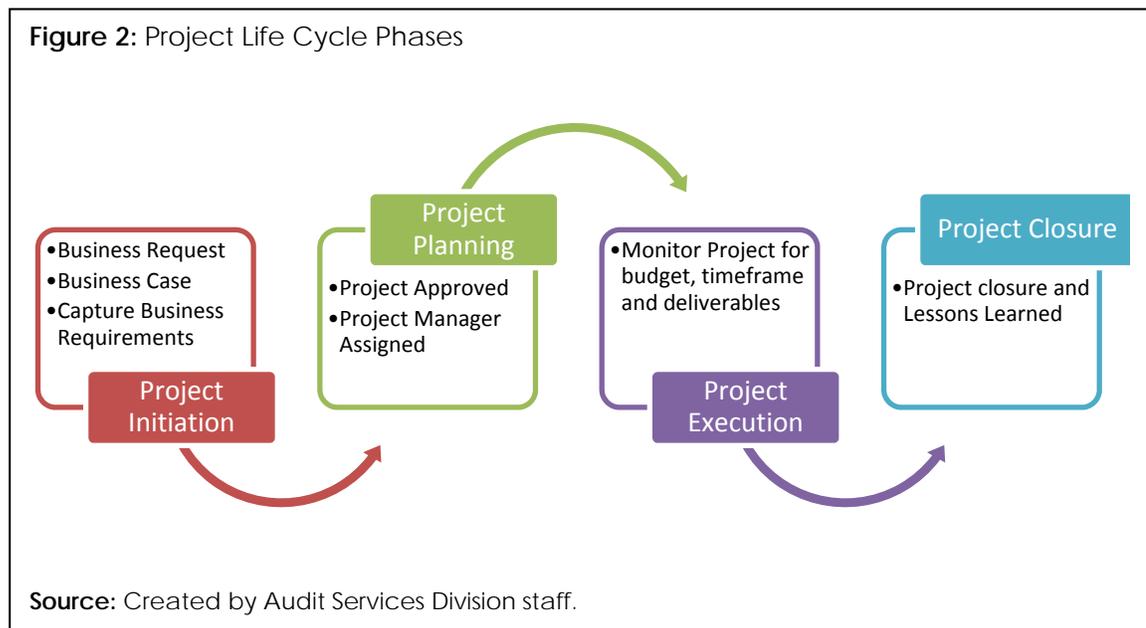
Figure 1: The Triple Constraint

Source: Accessed June 17, 2015, http://www.adaltadevelopment.co.uk/the-triple-constraint/

Project managers categorize project tasks into phases to provide improved management control, thereby increasing the likelihood of a successful outcome. Dividing the span of the project into phases allows the project manager to set milestones and deliverables for each phase to ensure continual progress toward completion of the project. Collectively, these phases are known as the project life cycle, which serves as a road map to keeping the project on track.

While the project life cycle can vary by organization, typically the process starts with a request from the organization for a specific product, service, or solution. A business case is created that captures the requirements, justifies the request, and details the potential impact if nothing is done. Once approved, a project manager is assigned and work begins on developing a solution. The project is continuously monitored to ensure that it will be delivered on time, on budget, and as designed. After the project has been completed, the project is closed out and successes and failures are discussed to pass on the knowledge for future projects. Figure 2 illustrates the typical phases of the project life cycle.

Figure 2: Project Life Cycle Phases

- Business Request
- Business Case
- Capture Business Requirements

Project Initiation

- Project Approved
- Project Manager Assigned

Project Planning

- Monitor Project for budget, timeframe and deliverables

Project Execution

Project Closure

- Project closure and Lessons Learned

Source: Created by Audit Services Division staff.

In the early stages of a project, it is important to establish clear and achievable objectives within the business requirements. If project requirements are not clearly defined, it will be challenging to produce the desired outcome. For example, a business may need to replace an outdated server. The business requirements might define technical specifications such as type of server, capacity requirements, and data and applications to be hosted on the server. The U.S. Government Accountability Office, which is responsible for assisting Congress in its oversight of the stewardship of public funds, recommends best practices for project scheduling. These include capturing and logically sequencing all project tasks; realistically determining task timelines; assigning resources; evaluating the

schedule and including additional time as a buffer or reserve; and updating the schedule on a regular basis to reflect the actual project status.[1]

Risks of Inadequate Project Management

The successful execution and completion of a project may be critical to an organization's continued operations. Depending on the size of a project, a failed or mismanaged project could significantly affect the organization, resulting in the loss of revenue. In the context of DIA, parking is one of the airport's highest revenue generators, accounting for nearly $159 million in 2013.[2] DIA's Technologies Division (DIA Technologies) recently carried out a project that replaced the server that hosts the parking database and application, which ultimately support the collection of airport parking revenue. Had this project not been delivered on time and the server failed, the loss of revenue generated by parking could have been substantial depending on the number of days that the system was unavailable.

The impacts of poor project management were also apparent in the implementation of the federal Affordable Care Act, which was passed in 2010. In 2013, the health insurance exchange website HealthCare.gov was launched to serve residents of the thirty-six states that opted not to create their own state exchanges. On the date the website went live, poor performance and unavailable systems resulted in only one out of every five users being able to sign in to enroll in healthcare coverage.[3] Several factors contributed to this failure such as unrealistic requirements, missed deadlines, and poor planning. These types of issues are examples of why sound project management is so important.

History of Project Management Tools and Approaches

Project management has existed in some form throughout history, evident in the development of city public infrastructures, such as housing, health, welfare, education, and transportation. Best practices and tools have been developed over time to direct and control project management activities.

A good example of a tool designed to control project management activities is the Gantt chart. The Gantt chart, developed by Henry Gantt in 1917, was one of the first widely adopted project management scheduling tools and is still used today. The Gantt chart illustrates the start and finish dates of a project, project phases, and tasks within the project. The Gantt chart has been used to schedule and manage large projects such as the construction of the Hoover Dam, which began in 1931.[4] Over time the Gantt chart has been enhanced to show the relationships between tasks, which are known as dependencies.

The Work Breakdown Structure approach was introduced by the U.S. Department of Defense in 1962. This methodology provides a structure by which to analyze the hierarchy

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[1] "GAO Schedule Assessment Guide, Best Practices for Project Schedules", United States Government Accountability Office, accessed July 14, 2015, http://www.gao.gov/assets/600/591240.pdf.
[2] Mayor's 2015 Budget Book, page 540, accessed July 20, 2015, http://www.denvergov.org/LinkClick.aspx?fileticket=H5j-ixtAvu8%3d&tabid=442869&mid=517000.
[3] "Why Do Big IT Projects Fail So Often?", accessed June 25, 2015, http://www.informationweek.com/strategic-cio/executive-insights-and-innovation/why-do-big-it-projects-fail-so-often/d/d-id/1112087?
[4]"Henry Gantt's legacy to management is the Gantt chart", accessed July 6, 2015, http://www.ganttchart.com/history.html.

of tasks and deliverables involved in completing a project. This methodology was adopted by the private sector and remains an effective project management tool.[5]

In 1969, five volunteers started a non-profit professional organization to advance the practice and profession of project management, known today as the Project Management Institute (PMI). This organization was created to share information and discuss common project management problems.[6] PMI first published a white paper to document accepted project management practices in 1987. The white paper has since grown into a comprehensive guide known as a Guide to the Project Management Body of Knowledge, or PMBOK, which reflects continually evolving knowledge in the field. In 1998 the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE) recognized the PMBOK as a standard. The PMBOK is a commonly used framework to document and detail proven traditional practices that are

> *The top three project management risk factors include lack of user involvement, incomplete requirements and specifications, and changing requirements.*

widely applied to project management. The framework provides a general overview of the knowledge and practices commonly applied to most projects. It is the most popular framework of its type, with more than half a million Project Management Professional (PMP) certification holders worldwide working in a wide variety of industries.[7]

In 1995, the Standish Group, a research advisory organization focused on improving software project management, published a first report on software project failures with a focus on identifying the major factors that cause project failures. Lack of user involvement, incomplete requirements and specifications, and changing requirements are the top three factors that result in project challenges.[8] The report includes a comparison of bridge construction projects to software development and concludes that one of the basic reasons that bridge construction projects have a higher success rate is that their requirements or specifications are exact. Additionally, bridge failures are investigated and documented to prevent future failure. The report explains that software development failures are often covered up, ignored, or rationalized instead of being thoroughly documented.[9]

The Information Technology Infrastructure Library (ITIL) framework, originated in the late 1980s, was a collection of books that documented processes for specific practices within IT Service Management (ITSM). The 2007 edition (version 3) organized the documentation into five volumes, including ITIL Service Transition, a complementary set of best practices that can be used in addition to sound project management practices to ensure that

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[5] "A Brief History of Project Management", accessed July 1, 2015, http://www.projectsmart.co.uk/brief-history-of-project-management.php.

[6] *ibid*

[7] Project Management Institute, Certifications, accessed July 21, 2015, http://www.pmi.org/Certification.aspx.
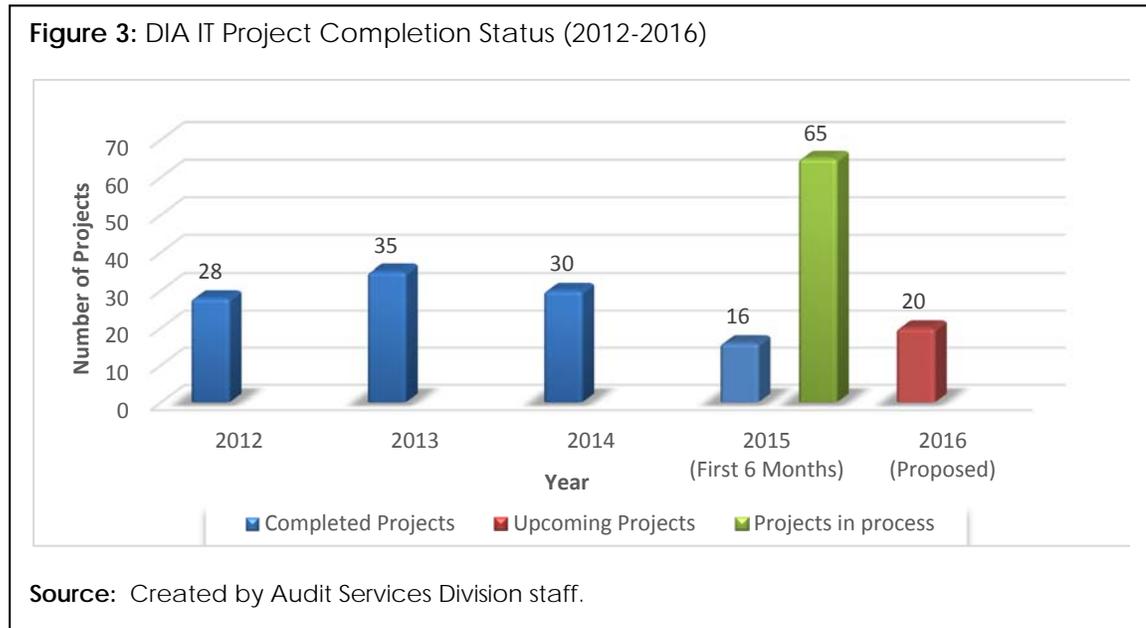
[8] "1994 CHAOS Report," Standish Group, accessed July 1, 2015, http://www.standishgroup.com/sample_research/

[9] *ibid*

projects are successful. ITIL provides a best practices framework for managing IT projects and services. Using a phased approach, DIA Technologies is in the process of adopting ITIL and integrating it with the PMBOK framework to enhance project management and service deployment activities.

DIA Technologies' Project Management Office

The Director of Portfolio Management oversees the Project Management Office (PMO) and reports directly to the Senior Vice President of Technologies in the DIA Technologies organizational hierarchy. This demonstrates the importance that DIA Technologies has placed on the PMO. The PMO consists of ten project managers who handle a wide range of IT projects for all DIA divisions. Recently completed projects include improving the public wireless network range within terminals, updating network servers, and upgrading DIA personnel computers to Microsoft Windows 7. In 2015 the PMO increased the number of projects it is overseeing by sixty-five projects with twenty more scheduled to start in 2016. Figure 3 shows the number of completed, in-progress, and proposed IT projects at DIA from 2012 through 2016.

Figure 3: DIA IT Project Completion Status (2012-2016)

Source: Created by Audit Services Division staff.

DIA Technologies uses a team collaboration tool called SharePoint to store standardized templates that are used for each project phase; the site includes the name of the template and identifies the associated phase for the document, which allows users to easily group documentation by project phase. In addition, each project has a project-specific SharePoint folder to store or archive the associated documentation.

Similar to the project life cycle phases depicted in Figure 2, DIA has also defined project life cycle by dividing the phases of projects by key activities and requirements that must be satisfied in order to move into the next phase of the project. DIA has identified the following eight phases:

1. **Intake –** During the intake phase the Project Management Team works with the business customer to build the project request business case, which documents the business problem or need and the solution requirements. The project requirements may include features or functionality that is mandated by regulatory agencies including the Federal Aviation Administration.

2. **Analysis and Evaluation –** In this phase, the Project Management Team engages the IT Architecture Core Team for a review of the project request business case; updates to the document are made based on their review. The Project Management Team performs a Risk/Complexity analysis, which identifies major business risks and complexity elements. The project is evaluated for each of the factors included on the Risk/Complexity score card including urgency of the project, maturity of the technology solution that will be implemented, the estimated cost of the project, and external constraints and dependencies. An authorization memorandum is required before the project can move to the next phase.

3. **Proposed –** During the proposed phase, assigned PMO resources create a project folder on SharePoint and migrate any existing documentation to this location.

4. **Approval –**A core project team is formed and the proposed solution is reviewed by an architecture team. This phase focuses on funding and approval for the proposed solution.

5. **Initiation –** During this phase, the size of the project is determined and the project charter is developed along with a complete risk assessment. The key requirement of this phase is to obtain the project sponsor's commitment and sign-off on the project charter. A project sponsor has a financial responsibility for the project's success.

6. **Planning –** During the planning phase, the project planning kick-off occurs and activities focus on developing a project management plan, including schedules, work breakdown structure, and budget. At this stage requirements are developed. The project sponsor signs-off on the project management plan, requirements, and design.

7. **Execution –** The project manager assembles the full project team during the execution phase. This phase includes the build or development of the project deliverables and the execution of the detailed test plans that provide quality assurance. The test plans may include both DIA Technologies resources and end users who perform user acceptance testing. After the project manager obtains customer acceptance of the deliverables, planned training activities occur and the project solution will be implemented into the production environment.

8. **Closeout –** In the final phase of the project life cycle, post-deployment tasks are completed and the appropriate production support teams or system support teams assume the on-going support for the solution. A post-project review that discusses lessons learned is included in this phase. The project manager also develops the completion document, finalizes project documentation, and obtains the sponsor sign-off.

The ITIL framework for Service Transition (Service Transition), as adopted by DIA Technologies, supports the project life cycle by providing additional guidance for specific activities within the project life cycle. For example, Service Transition specifies that a training plan should be developed to include training on standard change procedures, access management procedures, event managing (monitoring an application's performance), and disaster recovery procedures. Other activities that are specified by ITIL are to determine the storage location for configuration management items and to define the standard operating procedures for the new service.

SCOPE

The audit focused on DIA's IT projects spanning 2013 through 2015. From a population of seventy-two projects, we selected the following four projects based on a combination of risk and public importance:

1. Intrusion Detection System (IDS) – An IDS is a device used to detect network traffic for malicious traffic. The purpose of this project was to purchase and implement an IDS for DIA's network infrastructure to detect suspicious traffic and allow DIA Technologies to formulate a response. This solution helps keep the network infrastructure secure.

2. Desktop Imaging and Application Packaging – The purpose of this project was to replace DIA's current Windows XP desktop with an optimized, centrally managed system built on Windows 7. This solution was needed to move to a supported platform.

3. Safety Infraction Accountability – The purpose of this project was to create a mobile solution to allow Airport Safety officers to write violations from a mobile phone or tablet while in the field, and off of the network. A manual paper-based recording system was replaced by an electronic solution.

4. Parking Server Redundancy – The purpose of this project was to replace the server that hosts the parking revenue application and database and to provide a backup redundancy server for that system. This project helps better manage and safeguard the parking system and revenue generated by parking at DIA.

In addition to the four projects selected, we also analyzed the entire population of projects completed between 2013 and 2014 for evidence of key documentation. We reviewed all projects for three key documents that are necessary inputs to the process that move a project from initiation through to design and development to project completion. Specifically the key documentation we reviewed included the authorization memorandum, which provides the Portfolio Manager's approval to accept and begin work on the project, the business case and requirements document that details the expected business outcome, and the lessons learned section of the completion document that provides information to improve future project successes.

OBJECTIVE

The objective of this audit was to evaluate the process for transitioning DIA information technology projects from the project request through to production support where DIA Technologies assumes responsibility for continued operations of the solution after deployment to the production environment. The audit objective also included determining the existence of a documented program, reviewing key project documentation, and examining recording processes for project-related assets and application modifications. Further, the audit examined whether proper procedures were followed when operations assumed support for the new process or application. These can

include updating the technical documentation repository for support personnel and making training materials available.

METHODOLOGY

We tested the effectiveness of the project life cycle and selected sample projects. To assess risks and processes, we used a variety of audit methodologies, including:

- Consulting best practice standards such as Project Management Body of Knowledge (PMBOK), Information Technology Infrastructure Library (ITIL), and government project management articles

- Conducting interviews with project managers and the Project Management Office

- Examining DIA Technologies project management policies and procedures

- Reviewing all documentation by project generated throughout the life cycle of the project

- Examining the effectiveness of the use of ITIL in conjunction with the DIA Technologies project life cycle

- Evaluating a sample of projects for documentation completeness and accuracy

FINDING

DIA Technologies Can Take Additional Steps to Enhance its Information Technology Project Management Process

Denver International Airport's Technologies Division (DIA Technologies) has taken positive steps in the area of project management and service delivery through the adoption of the Information Technology Infrastructure Library (ITIL) framework. The processes and tools implemented by the DIA Project Management Office (PMO) have enabled DIA Technologies to successfully handle an increasing project workload. However, we identified key areas where the PMO could improve the overall effectiveness and maturity of the IT project management process. Specifically, we identified three areas where the PMO should focus their efforts to yield more desirable results. First, we found that not all project-specific information and documentation is available in DIA's enterprise project collaboration tool. Second, project managers are not consistently adjusting to and mitigating unforeseen roadblocks such as technical issues or resource constraints. Third, successes and failures encountered during a project are not documented at the completion of the project life cycle.

Key Project Documentation Is Not Centrally Located

DIA Technologies uses Microsoft's SharePoint web-based solution to electronically store, organize, and share project information for all resources working on a project. The purpose of having a central repository is to ensure that the most current version of a document is available to all project resources. The Project Management Body of Knowledge (PMBOK) supports communication management as a best practice, asserting that all documentation should be collected and stored centrally to ensure good communication throughout a project.

We found that key project documentation was missing from the IT project SharePoint repository. Forty-nine percent of the projects stored on the SharePoint website were missing one or more of the following documents: the project authorization memorandum, a business case, and a completion document. The authorization memorandum provides the approval to begin work on the project and includes the official start date. Although DIA Technologies staff subsequently located some of the missing documentation in hard copy form or on individual project managers' computers, due to the missing authorization memorandums, we were unable to provide an accurate analysis on the length of time to complete projects. Similarly, requirements captured in the business case are necessary to objectively assess whether projects met business needs and satisfied any mandated requirements. Lessons learned must be captured in the completion document to identify process improvements and successes with clear and actionable data. When lessons learned are not completed or marked as not applicable, processes or documentation cannot be addressed and enhanced.

This situation exists because the PMO does not monitor the repository to ensure compliance with DIA policy that all project artifacts be centrally located. Project artifacts are project

work based on phases generated throughout the project life cycle, such as diagrams, designs, templates, agendas, and checklists. A large number of IT projects can involve many teams. Each project is assigned a dedicated project manager and can also include subject matter experts, such as developers, architects, administrators, vendor liaisons, and operational managers. A centralized project management system helps teams work together by organizing all project artifacts in a central location. A centralized system environment also promotes accuracy and security of information and faster information delivery. Additionally, this can provide secure access to all project team members. Individuals not associated with a project should not have access to modify or remove documentation important to the project. Accordingly, the PMO should ensure that all documentation related to a project is stored on the Information Technology Service Management (ITSM) SharePoint site, as stated in the DIA Technologies ITSM methodology.

DIA Technologies Project Managers Need to Develop Timely Solutions to Obstacles Encountered During a Project

Audit work showed that some projects were managed without fully estimating the associated risks and requirements. Project issues encountered were not addressed quickly, and project sponsors or stakeholders were not notified to assist in determining next steps to prevent project delays.

ITIL's Service to Transition framework asserts that the service transition process occurs in a dynamic environment and factors may arise between the original design and the project development phase. Therefore project managers need to identify these deviations as they occur and determine what corrective actions can keep the project on course.

We found that some DIA Technologies projects are delayed, or in some cases do not fully meet initially stated objectives. For example, the Windows 7 migration project that we selected for review was stalled due to the need to purchase operating system installation software, as well as replacing hardware that did not meet minimum specifications. As a result, this spun off two separate projects in order to complete the Windows 7 project, ultimately requiring two years to fully complete the project. To avoid these types of delays in the future, the PMO should train staff to closely monitor projects and recognize factors that will lead to significant delays. Project managers should be cognizant of project team deliverables and hold resources accountable for the success of the project.

Lessons Learned From Projects Are Not Captured Consistently

Formal project closeout procedures should include assessing the outcomes of performance and the knowledge gained through the project life cycle. Lessons learned topics typically include the following:

- Whether risks were identified early

- Reasons behind corrective action

- Whether the project delivery process was understood

- Areas of improvement in the process

- How well scope management requirements were defined

- Whether the project was completed on time and budget

- Whether the solution met all business requirements

Completed projects did not identify the steps needed to improve future project successes. Forty percent of projects either did not have a completion document with lessons learned, or the lessons learned section of the completion document was not filled out. This occurred due to management not requiring completion of the lessons learned section to close out the project.

Organizations that do not assess their projects based on successes and failures continue to repeat the same mistakes and forego the opportunity to improve processes and efficiencies. Lessons learned provide future project teams the information needed to increase efficiency and effectiveness of project management. The Project Management Institute asserts that project managers have a professional obligation to conduct lessons learned sessions for all projects with key internal and external stakeholders, especially if the project yielded less-than-desirable results.[10] Accordingly, we recommend that the PMO should ensure a thorough lesson learned assessment is conducted and documented prior to project close-out for all projects.

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[10] Project Management Institute, *A Guide to the Project Management Body of Knowledge Third Edition*, Newton Square, PA, 2004.

RECOMMENDATIONS

We offer the following three recommendations to help improve DIA Technologies' project management practices.

1.1   **Project Documentation –** The Project Management Office should ensure that all documentation related to a project is stored in a central repository, consistent with the applicable provisions of the Technologies PMO and ITSM Methodologies.

1.2   **Staff Training –** The Project Management Office should train staff to recognize project course corrections when they arise, and empower them to apply necessary variations within prescribed and understood limits.

1.3   **Lessons Learned Meetings –** The Project Management Office should ensure a thorough lesson learned assessment is conducted and documented prior to project close-out.

AGENCY RESPONSE

DENVER INTERNATIONAL AIRPORT

TOGETHER WE SOAR

DENVER
THE MILE HIGH CITY

August 7th, 2015

Mr. Kip R. Memmott, MA, CGAP, CRMA
Director of Audit Services
Office of the Auditor
City and County of Denver
201 West Colfax Avenue, Dept. 705
Denver, Colorado 80202

Dear Mr. Memmott:

The Office of the Auditor has conducted a performance audit of DIA Information Technologies Project Life Cycle Process.

This memorandum provides a written response for each reportable condition noted in the Auditor's Report final draft that was sent to us on July 21, 2015. This response complies with Section 20-276 (c) of the Denver Revised Municipal Code (D.R.M.C.).

AUDIT FINDING 1
DIA Technologies Can Take Additional Steps to Enhance its Information Technology Project Management Process

RECOMMENDATION 1.1
Project Documentation – The Project Management Office should ensure that all documentation related to a project is stored in a central repository, consistent with the applicable provisions of the Technologies PMO and ITSM Methodologies.

Agree or Disagree with Recommendation	Target date to complete implementation activities (Generally expected within 60 to 90 days)	Name and phone number of specific point of contact for implementation
Agree	September 30, 2015	Kelan Pape, 303-342-2014

Narrative for Recommendation 1.1
The Technologies Project Management Office (PMO) will add a quality control procedure to ensure required project documents are completed and stored in the centralized repository.

RECOMMENDATION 1.2
Staff Training – The Project Management Office should train staff to recognize project course corrections when they arise, and empower them to apply necessary variations within prescribed and understood limits.

Agree or Disagree with Recommendation	Target date to complete implementation activities (Generally expected within 60 to 90 days)	Name and phone number of specific point of contact for implementation
Agree	September 30, 2015	Kelan Pape, 303-342-2014

Narrative for Recommendation 1.2

The PMO and Portfolio Managers will reinforce the key elements of risk and issue management with the project managers during weekly meetings and underscore the importance of proactive risk and issue mitigation measures.

RECOMMENDATION 1.3 Lessons Learned Meetings – The Project Management Office should ensure a thorough lesson learned assessment is conducted and documented prior to project close-out.		
Agree or Disagree with Recommendation	**Target date to complete implementation activities (Generally expected within 60 to 90 days)**	**Name and phone number of specific point of contact for implementation**
Agree	September 30, 2015	Kelan Pape, 303-342-2014

Narrative for Recommendation 1.3

Lessons learned exercises are conducted at the close out phase of the project but the report identified tangible opportunities for improvement to ensure the consistency and visibility of these exercises. The Technologies PMO will revisit the standard template used in close out and review the document nomenclature with project managers to ensure consistency. The PMO Manager and Portfolio Manager will periodically review lessons learned documentation for completeness and incorporate this review into our standard process.

Please contact Robert Kastelitz for any questions.

Sincerely,

Robert W. Kastelitz
Sr. Vice President of Technologies / CIO