NORTHERN ARIZONA UNIVERSITY

Internal Audit Department

Information Technology General Controls Audit Report

August 2016
Report Number FY 16-11

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Northern Arizona University
Information Technology General Controls
Audit Report
August 15, 2016

Summary

Our audit of Information Technology General Controls is in the Northern Arizona University Annual Audit Plan for FY 2016, as approved by the Audit Committee of the Arizona Board of Regents. The audit links to NAU's strategic goal of sustainability and effectiveness. The area was previously audited in December 2012.

Background: General controls are controls that relate to the environment within which computer-based application systems are developed, maintained and operated, and are applicable to all applications. The objectives of general controls are to ensure the proper development and implementation of applications and the integrity of program and data files and of computer operations. Like application controls, general controls may be either manual or programmed.

Common IT general controls are:

- Logical access controls over infrastructure, applications, and data;
- System development life cycle controls;
- Program change management controls;
- Data center physical security controls;
- System and data backup and recovery controls;
- Computer operation controls.

The IT environment being audited is Information Technology Services, which operates and maintains information technology and telecommunications services in support of the NAU mission and goals. Services include academic support, administrative systems support, student services, telecommunications, and faculty and staff support and training.

Audit Objectives: The objectives of this review were to assess ITS controls in the following areas:

- Change management
- Contingency planning
- Logical access policies, standards, and processes
- Physical security
- Problem management
- Project Management
- Source code / document version control
- Technical support

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Scope: The scope of our audit encompassed the examination and evaluation of the internal control structure and procedures controlling information technology general controls as implemented by ITS.

The scope also included a review of access rights assigned to users of PeopleSoft applications for Human Capital Management, LOUIE (student and employee information management system), and PeopleSoft Financials.

Methodology: We used control questionnaires and interviews to identify IT general controls, then tested a sample of the controls.

The audit was conducted in accordance with the *International Standards for the Professional Practice of Internal Auditing*.

Conclusion: Information technology general controls in the areas audited at Information Technology Services are adequate. One audit recommendation was made.

Observation: ITS has significantly improved its change management procedures since the previous IT General Controls audit in 2012.

NAU has also automated the process for assigning and removing logical access rights to PeopleSoft applications, replacing a cumbersome manual system.

The control standards we considered during this audit and the status of the related control environment are provided in the following table.

General Control Standard (The bulleted Items are internal control objectives that apply to the general control standards, and will differ for each audit.)	Control Environment	Recommen-dation No.	Page No.
Reliability and Integrity of Financial and Operational Information			
• Changes meet business requirements and are authorized.	Reasonable to Strong Controls in Place		
• Controls protect the integrity of program code.	Reasonable to Strong Controls in Place		
• Logical access to PeopleSoft applications is limited to authorized users	Reasonable to Strong Controls in Place		

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General Control Standard (The bulleted Items are internal control objectives that apply to the general control standards, and will differ for each audit.)	Control Environment	Recommen-dation No.	Page No.
Effectiveness and Efficiency of Operations			
• IT projects are effectively managed.	Opportunity for Improvement	1	4
• The root causes of problems are identified and addressed.	Reasonable to Strong Controls in Place		
• Procedures exist to help users report problems and perform more efficiently.	Reasonable to Strong Controls in Place		
Safeguarding of Assets			
• Access is managed based on business needs.	Reasonable to Strong Controls in Place		
• Disaster recovery/backup and recovery procedures enable continued processing despite adverse conditions.	Reasonable to Strong Controls in Place		
• Controls protect the physical security of information technology assets from individuals and from environmental risks	Reasonable to Strong Controls in Place		
Compliance with Laws and Regulations	Not Applicable		

We appreciate the assistance of the staff of Information Technology Services during the audit.

/s/
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Audit Results, Recommendations and Responses

1. The ITS Project Management Office is not managing IT projects effectively.

Condition: ITS has a project management framework for NAU information systems development projects, but it has not been fully implemented and does not enable the alinement of NAU information technology resources with NAU strategic goals.

Criteria: Information systems development projects should have project management adequate to ensure all relevant project management tasks are completed.

Cause: A pervasive lack of financial and staffing resources exists within Information Technology Services.

University culture assigns responsibility for successful implementation of enterprise systems development projects only to ITS, rather than ITS and project stakeholders. Stakeholders outside of ITS control some of the resources needed for successful project completion but currently do not share responsibility for success.

Effect: The current project management staff of three individuals is inadequate to assign a full-time project manager to each enterprise system development project. Project managers only have time to deal with the most critical project management tasks, such as identifying and assigning staffing resources to the project. Less critical project management tasks are being handled informally or not at all.

The current project management practices:

- fail to fully implement NAU's well-designed project management framework
- result in slow progress in changing NAU's culture of informality in information systems project management
- increase the risk of incomplete or flawed systems implementation
- result in Inadequate involvement in systems development by the user community.

Recommendation:

The organization and procedures of the Project Management Office should be reviewed to enable :

- o a full-time project manager to be assigned to each enterprise systems development project

  o resources for project management consulting to be available to smaller information systems development efforts.

Response: We agree with the audit recommendation as reported. Regarding the one opportunity for improvement, we agree that project management staffing is not ideal for our current project load. With the difficulty in funding new hires, we will need to find some creative ways to improve our current process. One option that we are pursuing is to more carefully align projects with strategic mission, so that we can focus scarce resources on the most critical tasks. This may result in the delay of some projects, but should provide superior results for the chosen projects, with a positive impact on IT, project management, and functional office staffing resources. We will look for other ways to improve our current process, and will report progress when requested.

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This report is intended for the information and use of the Arizona Board of Regents, NAU administration, the Arizona Office of the Auditor General, and federal awarding agencies and sub-recipients.

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