



# AUDIT AND ADVISORY SERVICES

## Human Resources – Information Management Audit

Project No. 17-699

December 5, 2017

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December 5, 2017

Marc Fisher  
Vice Chancellor  
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Vice Chancellor Fisher:

We have completed our audit of human resources information management as per our annual service plan in accordance with the Institute of Internal Auditors' *Standards for the Professional Practice of Internal Auditing* and the University of California Internal Audit Charter.

Our observations with management action plans are expounded upon in the accompanying report. Please destroy all copies of draft reports and related documents. Thank you to the staff of Central Human Resources, Campus Shared Services – HR and Academic Personnel Support, and Information Services and Technology for their cooperative efforts throughout the audit process. Please do not hesitate to call on Audit and Advisory Services if we can be of further assistance in this or other matters.

Respectfully reported,

Wanda Lynn Riley  
Chief Audit and Risk Executive

cc: Interim Assistant Vice Chancellor Jo Mackness  
Chief Operating Officer Peggy Huston  
Director Janet Speer  
Director Tommy Howard  
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**University of California, Berkeley**  
**Audit and Advisory Services**  
**Human Resources – Information Management**

**Table of Contents**

OVERVIEW .....	2
Executive Summary .....	2
Source and Purpose of the Audit .....	3
Scope of the Audit .....	3
Background Information.....	3
Summary Conclusion.....	4
SUMMARY OF OBSERVATIONS & MANAGEMENT RESPONSE AND ACTION PLAN.....	6
Processing HCM Transactions.....	6
Business Intelligence and Reporting Platforms .....	8
Periodic Review of User Roles and Privileges in HCM.....	10
Accuracy of Position Data .....	11

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# OVERVIEW

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## Executive Summary

Our Human Resources – Information Management audit was conducted between August 2016 and March 2017. The scope of our audit consisted of an evaluation of the Human Capital Management (HCM) system and the underlying business process for completing personnel actions. It also included campus reporting solutions.

Based upon our audit procedures performed, while management is continually striving to adapt and improve the processing of human resource (HR) actions in HCM, we identified the following process improvement opportunities:

- *Processing HCM Transactions* — Currently opening a service ticket in ServiceNow by filling out and submitting an electronic form requires a subsequent manual entry by Campus Shared Services-HR and Academic Personnel Services (CSS HR/APS) into HCM for the personnel action to be recorded, with data duplicated in both systems. The upcoming UCPATH implementation provides an opportunity to consider whether processes for recording HR transactions in UCPATH should be developed to minimize duplication of data collected and entered and whether CSS HR/APS should continue to be the campus unit that enters all types of HCM transactions. Lower risk HR transactions (such as payroll distribution, supervisor change, etc.) could be reassigned back to individual units, who are currently entering the information into ServiceNow, to improve overall efficiency.
- *Business Intelligence and Reporting Platforms* — The campus has not enabled direct PeopleSoft query access to HCM for selected campus users and the existing management reports related to human resource data are limited in both the BAIRS and Cal Answers platforms. A potential course of action is to conduct an assessment of projected reporting capabilities of UCPATH to determine whether it will be adequate to meet campus needs. If gaps in UCPATH reporting capabilities are identified, new reports in Cal Answers may need to be developed and implemented.
- *Periodic Review of User Roles and Privileges in HCM* — There are over one hundred roles in HCM that are actively used but only two are included in the quarterly campus process for reviewing key roles in enterprise systems. There is not currently a routine process to periodically review users for these other roles and the privileges associated with each active role. Expanding the current quarterly process for reviewing assigned HCM roles and privileges safeguards personal information and ensures alignment with job responsibilities.
- *Accuracy of Position Data* — The campus employs a position management process whereby advanced approval is required before a hire can be made. The campus has not developed internal controls to ensure that positions are rationalized and that the current status of positions are accurate. Position management reports could also be developed and reviewed on a periodic basis. It may appear that there are more authorized positions than actual. Unmanaged positions may be inappropriately used.

## **Source and Purpose of the Audit**

The purpose of this audit was to determine whether adequate controls were in place and in effect to provide reasonable assurance that stewardship of HR information is effective, such as for understanding and supporting the needs of users, ensuring the integrity and reliability of data, and ensuring the quality of data used to support management decisions.

## **Scope of the Audit**

The scope of our audit consisted of an evaluation of the Human Capital Management (HCM) system and the underlying business process for controlling the processing of personnel actions in HCM. The scope of our audit also consisted of campus reporting solutions for HR data, with a focus on internal controls over enabling and sustaining the use of these solutions to facilitate decision-making through, for example, effective documentation, on-going support, and adoption monitoring. The audit was conducted from August 2016 to March 2017.

To determine the audit scope, we performed audit planning steps, which included obtaining an understanding of the relevant information systems that process human resource information. We reviewed previous audit reports and security assessments performed by Information Security and Policy and performed a risk assessment. We focused our efforts on HCM and campus reporting solutions because HCM is the system of record and these reporting solutions are a significant source of human resource data for decision support and analysis. The Payroll and Personnel System (PPS) was excluded from our audit since this system, which is primarily used for payroll purposes, is managed by UC Office of the President and has a short remaining useful life given the implementation of UCPath and because the HR information in this system is essentially the same since these systems interface with one another.

## **Background Information**

Processing HR transactions is a collaborative effort between the employee (i.e., self-service transactions), the department, CSS HR/APS, and Central Human Resources depending on the transaction. While there are many campus systems that contain HR information, HCM and ServiceNow are the primary information systems (excluding PPS).

HCM is used to create and update personnel information and actions. It functions as the human resource system of record for faculty, staff, and student employees and certain affiliated non-employees such as visiting scholars, volunteers, and consultants. HCM is part of a PeopleSoft integrated suite of applications and business processes that is used to, among other things

- create and maintain employee and job profiles;
- create and maintain employee appointments for planning and budgeting; and
- create and manage job openings and postings for recruiting.

In addition and separate from the PeopleSoft platform, the campus uses ServiceNow for submitting service requests to CSS HR/APS. The user selects a topic from the CSS HR/APS service catalog

and submits a request form containing relevant information to process the request, such as to create and post a job opening or update a person or job record.

Data repositories and decision support systems for human resources management include HR-BAIRS, Cal Answers, and CalPlanning. HR-BAIRS offers the most reports to campus users and contains information about an employee's job record such as the department, appointment type, earnings distribution details, salary history, and transactional data. Cal Answers offers reports such as an HR census and staff retirement report for continuity and succession planning. CalPlanning offers reporting for compensation planning when developing a unit's budget.

In December 2018, the campus is scheduled to transition to UCPATH and will need an efficient and effective business workflow to prepare, approve, and record human resource and payroll transactions into the new systemwide replacement system, which is also on a PeopleSoft platform. UC Riverside has developed ServiceLink, which appears to be similar to our ServiceNow solution that will manage workflow through the new systemwide shared service center. However, individual personnel actions will continue to be entered by each individual campus. Our campus needs to understand the technical and business requirements of UCPATH so that interim campus changes or investments in HR business processes are aligned with UCPATH. Based on the work of the research end-to-end project, it appears that the campus will pilot the development of a regional model for the provision of shared services and gradually move away from a fully centralized approach.

### Summary Conclusion

Based upon our audit procedures performed, while management is continually striving to adapt and improve the processing of HR actions in HCM, we identified the following process improvement opportunities:

- *Processing HCM Transactions* — Currently opening a service ticket in ServiceNow by filling out and submitting an electronic form requires a subsequent manual entry by CSS HR/APS into HCM for the personnel action to be recorded, with data duplicated in both systems. The upcoming UCPATH implementation provides an opportunity to consider whether processes for recording HR transactions in UCPATH should be developed to minimize duplication of data collected and entered and whether CSS HR/APS should continue to be the campus unit that enters all types of HCM transactions. Lower risk HR transactions (such as payroll distribution, supervisor change, etc.) could be reassigned back to individual units, who are currently entering information into ServiceNow, to improve overall efficiency.
- *Business Intelligence and Reporting Platforms* — The campus has not enabled direct PeopleSoft query access to HCM for selected campus users and the existing management reports related to human resource data are limited in both the BAIRS and Cal Answers platforms. A potential course of action is to conduct an assessment of projected reporting capabilities of UCPATH to determine whether it will be adequate to meet campus needs. If gaps in UCPATH reporting capabilities are identified, new reports in Cal Answers may need to be developed and implemented.
- *Periodic Review of User Roles and Privileges in HCM* — There are over one hundred roles in HCM that are actively used but only two are included in the quarterly campus process

for reviewing key roles in enterprise systems. There is not currently a routine process to periodically review users for these other roles and the privileges associated with each active role. Expanding the current quarterly process for reviewing assigned HCM roles and privileges safeguards personal information and ensures alignment with job responsibilities.

- *Accuracy of Position Data* — The campus employs a position management process whereby advanced approval is required before a hire can be made. The campus has not developed internal controls to ensure that positions are rationalized and that the current status of positions are accurate. Position management reports could also be developed and reviewed on a periodic basis. It may appear that there are more authorized positions than actual. Unmanaged positions may be inappropriately used.

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## SUMMARY OF OBSERVATIONS & MANAGEMENT RESPONSE AND ACTION PLAN

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### Processing HCM Transactions

#### Observation

##### *Background*

Personnel actions such as recruitment and hiring, job changes, payroll distribution changes, supervisor changes, compensation changes, extending appointment terms, etc. are recorded as transactions in HCM. Certain critical pieces of information are required for each type of transaction in order for it to be accurately recorded in HCM. These elements vary depending on the transaction type or the type of employee (faculty, staff, student, non-employee campus affiliate, etc.). Inaccurate recording of the transaction can result in financial errors, operational inefficiencies and/or compliance issues.

With the exception of a few units that are not supported by CSS, CSS HR/APS records personnel actions in HCM. In order to accurately record these transactions, requesting supervisors or units can either (1) call CSS and speak with their HR partner who will intake the information and open a service request ticket in CSS's ServiceNow ticketing system, (2) directly access the CSS ServiceNow portal (CSS HR/APS Service Request Catalog) and request the transaction, attaching supporting forms and documents where required, or (3) e-mail their request to their unit's HR partner. In each of the three cases, there is typically a standardized CSS HR/APS form that is completed for that transaction type or class of employee and an associated service ticket is created in ServiceNow.

##### *Observation*

The process of opening a service ticket in ServiceNow and filling out the required form requires a subsequent manual entry of the information into HCM for the personnel action to be recorded. We therefore observe that the information necessary to enact the HCM transaction is recorded twice, once on the CSS form that is associated with the ServiceNow ticket and then also as recorded in the HCM transaction itself, and this represents a duplication of effort.

CSS management has represented that the ServiceNow ticket, completed request form, and any other associated documentation are all captured and associated with the individual ticket providing a record to support the transaction. CSS asserted that prior to this process being implemented, when individual units recorded HCM transactions, the campus relied on units to retain supporting documentation, which in practice was not done consistently.

Part of the root cause of this situation is that the campus did not implement the workflow capabilities available in HCM. There is not a typical prepare and approve workflow, such as with financial journals in the campus general ledger system.



### *Process Improvement Opportunity*

The campus is scheduled, as part of the systemwide UCPATH implementation, to go live in December 2018. As a result, the campus should consider whether processes for recording HR transactions in UCPATH should be developed to minimize duplication of data collected and entered and whether CSS HR/APS should continue to be the campus unit that enters all types of HCM transactions.

At a minimum we observe that the forms used to prepare and collect information from campus departments are used for several types of HCM transaction and not all of the information fields collected are necessary for different transaction types. As a result, extraneous information is collected for certain transaction types. For example, the Data Change form is used for the following HCM transactions:

- supervisor change;
- renewal of appointment;
- pay rate change, and
- percentage of appointment change.

The campus PeopleSoft HCM system has capabilities to have transactional workflow that can vary based upon the end-user request. The workflow could update the database immediately for certain transaction requests, or route the request for additional review and approval.

Under the research administration end-to-end project, a regional model for CSS is being considered. Management should consider moving CSS HR partners and generalists physically closer to the departments they support while retaining the existing CSS HR/APS organizational structure and reporting lines. This would enhance CSS HR/APS capabilities to better integrate, embed, communicate, and enhance their understanding of the departments they support and create improved outcomes, confidence, trust, and effective use of resources. Placing CSS HR partners and generalist closer to the departments they support will eliminate the need for duplicate entry of HR transactions in ServiceNow and HCM while retaining the use of ServiceNow, within CSS HR/APS, for internal workflow management.

Given that the campus's HCM system is anticipated to be retired in less than two years if UCPATH implementation continues on its current schedule, it may be prudent to focus campus efforts in the near term to understand how best to optimize campus processes given the design configuration of UCPATH, which is still under development with pilot cohort campuses. We understand that UCPATH will be able to accommodate both campuses that have centralized the preparation, review, approval and recording of HR transactions in campus shared services centers as well as those where such transactions are still handled by individual units in a decentralized manner.

Although in recent years the campus has made a considerable investment of time and resources to implement CSS, the upcoming UCPATH implementation provides an opportunity to revisit whether certain types of lower risk HR transactions (such as payroll distribution, supervisor change, etc.) could be reassigned back to individual units to improve overall efficiency. Other transactions that are more complex or are associated with greater levels of operational, financial or compliance risks (such as job reclassification, terminations, leaves of absences, etc.) could be retained by CSS and/or Central Human Resources. In addition, if transactional workflow is enabled for review and

approval in UCPATH, the need to rely on ServiceNow as a separate system for supporting approvals and documentation could be reduced or eliminated. From what we understand to date, the decision of who interacts with UCPATH and what offline business processes support UCPATH transactions will remain a campus-level decision.

## **Management Response and Action Plan**

University of California is in the midst of undertaking a significant systemwide system update called UCPATH. Broadly speaking, most, if not all, of the recommendations made in this report will be evaluated and/or addressed during the implementation of UCPATH. Through UCPATH, the University of California is transforming the way we deliver human resource, benefits and payroll services. UC Berkeley is part of the second deployment which is slated to go live December 2018. Steps are already underway to prepare for the update, but we do not know the precise manner in which the implementation will address the recommendations of the report. Below is our best estimate using the information we have at present.

This issue will be fully addressed by UCPATH implementation. In the interim, we already have a taskforce focused on more immediate process improvements around HCM data entry (currently targeting academic appointments) led by Peggy Huston (Campus Shared Services). A report with the taskforce's recommendations for process improvement will be presented to the campus UCPATH Steering Committee for approval. The UCPATH Steering Committee includes Interim Assistant Vice Chancellor Human Resources Jo Mackness, Vice Chancellor - Chief Financial Officer Rosemarie Rae, and Associate Vice Chancellor for IT and Chief Information Officer Larry Conrad. The target completion date for the taskforce report is June 2018. The recommendation to pass the low risk HR transactions to the individual departments is less likely given downstream impacts on payroll processing and documentation concerns. However, the suggestion will be considered by the taskforce.

## **Business Intelligence and Reporting Platforms**

### **Observation**

#### *Background*

Campus members currently have two main sources for creating management reporting of enterprise human resource data: BAIRS and Cal Answers. Both applications access a common electronic data warehouse that contains information from the campus financial systems (BFS), human resource system (HCM) and payroll system (PPS).

The Berkeley Administrative Initiative Reporting System (BAIRS) is an Oracle Enterprise Performance Management System Workspace – Fusion Edition platform and has been in use on the campus since 2001. We understand that this product has reached the end of its development lifecycle and that its developer will not be providing any future versions of this product.

Cal Answers is an Oracle Business Intelligence – Enterprise Edition platform envisioned to fully replace BAIRS. Currently, it is designed to provide management reporting from the campus's student information system (itself running on a PeopleSoft Campus Solutions platform), procure-to-pay system (a JAGGAER platform locally branded as BearBuy), and some financial data from

the campus contracts and grants system for the PI Portfolio. For other financial, human resource job and position, and payroll data, campus users use the legacy BAIRS platform.

The campus has not enabled direct PeopleSoft query access to HCM for campus users.

### *Observation*

We observe that management reports related to human resource data is limited in both the BAIRS and Cal Answers platforms. Although there are many pre-defined standard reports in BAIRS, capabilities to customize queries are limited unless the user has relatively advanced skills to “go behind the dashboard” and modify queries. Cal Answers has a more modern, interactive interface for reporting but reports are limited to three campus workforce planning areas: at a glance, HR census, and staff retirement metrics. Most transactional data is still only available in BAIRS.

With the implementation of UCPATH in 2018, it will replace HCM as the system of record for human resource and payroll transactions. The final design of UCPATH has not been finalized, but we currently understand that some reporting capabilities will be enabled directly in UCPATH. In addition, the UCPATH Center will also have its own data intelligence reporting solution, Cognos. It is not clear whether our campus electronic data warehouse will also have a data feed from UCPATH from which local reporting tools such as BAIRS or Cal Answers can run.

In our discussions with a sample of departmental users, BAIRS was cited as having reliability issues insofar that it frequently crashes or times out when running queries. In addition, the predefined reports do not fully address some perceived common and persistent needs such as separate reports for academic and staff positions. Lastly, documentation and training on the use of BAIRS HR reports is less developed than for the BAIRS financial and payroll reports.

### *Process Improvement Opportunity*

If gaps in UCPATH reporting capabilities and campus needs are identified, new reports in BAIRS or Cal Answers may need to be developed and implemented. Given that BAIRS has a limited future as a vendor product, the campus should focus on Cal Answers for further development. The campus is currently spending around \$200,000 per year to Oracle Corporation for BAIRS support. Reducing our footprint by retiring BAIRS and moving to another product such as Cal Answers or UCPATH Cognos could save the campus money and improve productivity of the IT service provider (IST – Enterprise Data).

### **Management Response and Action Plan**

Plans are already underway to retire BAIRS. The recently created subject matter expert committee is developing its plan to build the necessary HR reports in Cal Answers in order to be able to retire BAIRS in Fall 2018 (December of 2018). Teal Sexton (CFO Office) is leading this effort and Dan Hoisie (Central HR) is part of the team to vet the requirements and perform user acceptance testing.

## Periodic Review of User Roles and Privileges in HCM

### Observation

#### *Background*

User access requests for certain common HCM roles are handled through the Systems Access Request Application (SARA). Access is granted either at a department level (approximately ten user roles) where a user can see only information and transactions for their own department or at a global level (approximately twenty five roles). Another approximately twenty roles can be requested directly through Central Human Resources.

#### *Observation*

There are 108 roles in HCM that are actively used. However, only two (BK Workforce Admin Update and BK Workforce Admin Correction) are included in the quarterly campus process for reviewing key roles in enterprise systems. There is no routine process to review users who have been granted access to the other 106 active roles in HCM.

In addition, there is not currently a routine process to periodically review the privileges associated with each active role (i.e., what each role can or cannot do in the system).

#### *Process Improvement Opportunity*

Management should consider whether the current quarterly process for reviewing the assignment of HCM roles should be expanded to include other roles that have the ability to create, update, or delete data fields, records and transactions to ensure that this population of users is rationalized to only those with a current business need.

In addition, management should consider conducting a review of privileges associated with each active role on a periodic basis or at least when privileges associated with individual roles are updated.

Management should consider using SARA for those requests for access made directly through Central Human Resources so that all requests for access are standardized, documented, and controlled through the use of this system.

The planned implementation of UCPath in December 2018 will also necessitate that the campus soon think forward to develop local processes and controls to provision access to UCPath.

### Management Response and Action Plan

Central HR has already begun evaluating this issue. As a first step, Central HR has changed what is included in “view” access so that it now excludes disability information, mitigating some of the campus’s risk around privacy. Tommy Howard (Central HR) and Janet Speer (Central Shared Services HR) will examine and develop a plan around how we can systemically audit and appropriately control HCM access by December 2017.

## Accuracy of Position Data

### Observation

#### *Background*

One key element of the campus' PeopleSoft HCM platform is the ability to structure the HR system by person or by position. PeopleSoft describes the difference as follows:

When you drive PeopleSoft Human Resources by person, you use job codes to classify job data into groups. You use those codes to link person data to job data. When you drive PeopleSoft Human Resources by position, you still use job codes to create general groups, or job classifications, in your organization, such as EEO (equal employment opportunity) and salary survey data, but you also uniquely identify each position in a job code and link people to those positions<sup>1</sup>.

Job codes primarily have a one-to-many relationship with workers. Many workers share the same job code, even though they might perform the work in different departments, locations, or companies. You identify the job that a worker performs through the data that you enter in the worker's job records.

In contrast, positions usually have a one-to-one relationship with workers. However, you can have several positions with the same job code; positions track details of a particular job in a specific department or location. When you drive your system by position, you define specific attributes of various positions and then move workers in and out of those positions.

The campus employs a position structure for its HCM platform.

#### *Observation*

All new and replacement staff positions are subject to a position control process whereby advanced approval is required before a hire can be made. Review and approval for filling this position is conducted and captured outside the HCM platform.

Although the campus utilizes positions in the HCM platform, it has not developed a robust set of internal controls to ensure that the population of positions is rationalized and that the status of positions (approved versus unapproved, active versus inactive, regular versus temporary, etc.) are accurate. Without controls to ensure the ongoing accuracy of position data, it is difficult to conduct workforce planning or compensation budgeting for authorized positions.

Anecdotally, we have heard that in situations it is viewed as more convenient to create a new position rather than modifying or updating existing positions – creating an impression that more positions exist for that unit than is warranted.

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<sup>1</sup> [http://docs.oracle.com/cd/E39904\\_01/hcm92pbr0/eng/hcm/hhaf/concept\\_PersonorPositionStructure-e329a2.html](http://docs.oracle.com/cd/E39904_01/hcm92pbr0/eng/hcm/hhaf/concept_PersonorPositionStructure-e329a2.html)

### *Process Improvement Opportunity*

Management should consider developing and implementing a process whereby the status of positions is routinely reviewed for accuracy. Position management reports could be developed and reviewed on a periodic basis, for example prior to the annual budget cycle. As a part of the FY2017-18 budget process guidelines issued by the Budget Office, divisions were expected to review and update records in HCM Position Management by January 30, 2017 in an effort to minimize the work needed to update CalPlanning's Human Capital Planning tool.

### **Management Response and Action Plan**

There is an essential question that needs answering before we can improve the accuracy of position numbers. Does each position get its own position number or do identical positions share numbers? This is sometimes called "one-to-one" or "one-to-many". The Controller's Office has decided that the question is best answered by UCPATH. Only after that decision is made, can we examine the internal controls. In the meantime, as a stop gap measure, CSS in partnership with the Controller's Office, does an annual audit or cleanup of the position numbers.