2018 SACUBO BEST PRACTICE ENTRY:

Reconciliation Redefined: Using Technology to Improve Data Reconciliation Processes.

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Abstract

With 40,000 transactions occurring through campus-provided accounts each day, having robust and reliable data management processes managing accounts, activity, and balances is essential. Auxiliary Services helps the University of Georgia's (UGA) community and guests shop, eat, ride, park, and play while they are on campus. The division has a responsibility to over 11,000 meal plan participants and 61,924 account holders to provide them with the ability to acquire meals or purchase goods or services. In order to ensure customers have a positive experience on campus and customer-facing operations provide services with efficiency, accounting and IT teams seamlessly support data processes behind-the-scenes each and every day.

When Auxiliary Services underwent a transition to a new card management system, it was imperative that customers experience minimal interruption to their campus accounts or ability to purchase goods and services on campus. To do this the team had to accurately reconcile tens of thousands of account records from the previous system to the new. Simultaneous to the card management transition, dining services implemented new IRIS recognition cameras in place of hand key readers to grant customers access into the dining commons. It was essential that as these two transitions occurred, data associated with customer accounts remained accurate so the customer was associated with the correct account and the account reflected the correct balance.

Through the reconciliation process, the team at UGA experienced positive results as they accomplished their goal, identified a new software solution for visualizing and processing data, strengthened partnerships among staff, and paved the way for future process improvements within the department. The changes that took place could not have happened without collaboration between IT and accounting, nor without the tremendous effort from the staff within Auxiliary Services who remained committed to supporting UGA's operating units and ensuring customers had a positive experience while on campus.

Introduction of the Organization

The University of Georgia (UGA), established in 1785 as the nation's first state-chartered university, is the flagship institution among the 30 colleges and universities in the University System of Georgia. With just over 36,000 students, approximately 10,000 faculty and staff and an annual budget of nearly $1.5 billion, UGA is the largest and most comprehensive educational institution in Georgia and a driving force in the state's economic growth.

The University of Georgia's academic reputation is on the rise, and admission is increasingly competitive. More than 24,400 applicants applied for the Fall 2017 class of just over 5,800 freshmen. The University of Georgia is ranked 16th among the nation's top public universities by *U.S. News & World Report*, and the institution is consistently recognized as one of the best values in American higher education. Seventeen colleges and schools, along with auxiliary divisions, conduct the University's tripartite mission of teaching, research and service.

Auxiliary Services is a unit of Finance and Administration at the University of Georgia. The department is comprised of the UGA Bookstore, Golf Course, Dining Services, Transportation and Parking Services, and Vending Services. Auxiliary Services receives no funding from tax dollars. This department is chartered to be self-funded, requiring that it earn all its money by charging for services, as delivered, on a fee or per transaction basis. Business processes are managed by internal accounting and IT departments.

Statement (restatement) of the Problem/Initiative

The University of Georgia (UGA) offers several campus accounts to students, faculty, staff, and guests that allow them to purchase food, goods, and services on campus. All of these accounts have data that is tracked and monitored through a card management system. This ensures customers are associated with the correct accounts and that those accounts have the correct balances. When thinking about the card management system, it is helpful to think about the person as the starting point. A student enrolls at UGA or a faculty/staff member becomes employed and is then given a UGAID card. The person can then use their UGAID card if they choose to open any of the campus accounts offered. Once an account is opened, a balance is created and the person may use the card to acquire food, goods, and services.

During the summer of 2017, Auxiliary Services underwent a transition to a new card management system. For this transition to take place, a team of accounting and IT staff had to accurately migrate tens of thousands of account records from the previous system to the new and then reconcile that data for accuracy. The account records that the team was reconciling consisted of several account types including:

- **Student All-Access Meal Plans** – provides students with unlimited service to UGA's dining halls.
- **Student Block Meal Plans** – associated with meal plans that are not all-access. Provides students with a set number of meals for use in UGA's dining halls each semester.
- **Employee Block Meal Plans** - provides employees with a set number of meals for use in UGA's dining halls each semester.

- **Paw Points** – points associated with the meal plan that allow students to purchase food on a per point basis from UGA's retail dining locations.

- **Bulldog Bucks** – declining balance account that allows for purchases of goods and/or services from participating vendors.

- **Visitor cards (VTS accounts)** – reloadable cards for printing on campus.

- **Summer Camps & Conferences** – custom plans used for group dining during summer sessions.

There were three significant challenges with migrating customer account records to the new card management system.

The first challenge was for Auxiliary Services to migrate only valid data to the new system. UGA has over 36,000 students and 9,000 faculty and staff. The total number of people who can possess a card and have one of these accounts attached to it for services is vast. The large enrollment, on top of historical data that had not been cleaned up, meant that the department was maintaining 87,660 account records. Many of these records were inactive or duplicates. This meant the division needed to fully vet the current data (both active and inactive) to identify and categorize data that should be excluded (or included) with the migration.

The second challenge was to ensure an uninterrupted transition of account data so students would not be impacted. In other words, the division did not want any student to encounter a problem paying for food or service on campus during or after the transition. With the large number of account records on file, balance values during a regular academic school year can reach into the millions of dollars. It was crucial for IT to have a solid reconciliation process to ensure the accurate migration of data. The team was going to have to analyze what tools they

had available to allow that process to be as smooth as possible and would need to conduct

practice runs with accounting and dining ahead of time to ensure their process would be correct.

The goal was minimal interruption to the customer so that students, faculty, and staff could

continue to enjoy dining and shopping on campus as normal.

The third challenge was to seamlessly migrate the data simultaneously with the

implementation of a new IRIS recognition camera system that granted students access into the

dining facilities through iris verification. The team had to make sure the data migrated properly

so when a student arrived at the IRIS camera, the system could match the student to their correct

account type and account balances for entry into the dining hall.

Design

Identifying a Team

The design of this project, in its simplest terms, was to **extract**, **transform**, and **load** data

from the old card management system to the new. Though the process sounds simple, the old

system contained 87,660 distinct card numbers and 5.1 million lines of transaction data.

Accounts had multiple sources of data that included meal plan balances as well as Paw Points /

Bulldog Bucks (currency data) balances. Since the reconciliation process involved several

different account types, technical systems, and accounting processes, it was key for staff within

Auxiliary Services to collaborate. The reconciliation could not solely be an IT project nor could

it solely be an accounting project. It also had to involve key stakeholders affected by the

migration. The department identified a team of IT, accounting, and operations staff who would

develop a plan to manage the project. This team identified the following design process:

1. Review all transactional data in the old system

2. Categorize the data and determine which categories should migrate to the new system

3. Validate data selected for migration

4. Identify appropriate timing for the transition

5. Conduct multiple test runs of the data migration process

6. Conduct the actual data migration process

7. Validate data within new system post migration

The team also met with Dining Services for guidance on meal plan account information. They had to know if each card number had a balance. If it did, that balance needed to be confirmed with accounting to ensure it reconciled and matched current reports.

Identifying Software

The team then had to identify software programs to transform the data. With such a vast amount of distinct card numbers and transaction data, it was too much for standard spreadsheet software programs to process. The team identified Qlik as the data visualization software they would use to process and validate the data during the migration. Qlik was beneficial in many ways, but one useful technique included its ability to group multiple data sources into a single location so the team could easily see balances by account type per person. This was helpful since a single person's campus card may have multiple balances from the various campus accounts offered. The team was then able to design eight distinct export folders based on the types of accounts that individuals held for migration to the new system. This information had to be reviewed and confirmed by accounting staff within Auxiliary and Dining Services. Qlik allowed the team to complete a true one-to-one reconciliation of each account as opposed to a summary-level reconciliation. Not only did the software allow the team to process large amounts of data, but it also provided the team with instant interactive reports, charts, and graphs to visualize what

was actually happening with the data. Screenshots of these charts and graphs can be found at the end of this paper.

Implementation

Pre-Migration Process

The team spent several weeks prior to the migration testing their process and refining weak points. During this time, they were identifying and categorizing existing data, reviewing customer account history, and setting up a new general ledger account.

Before actually migrating the data, the team needed to resolve issues within the old system and determine which data would migrate to the new system. The team extracted the data from the old system (87,660 card numbers and 5.1 million lines of transactions) and categorized it into Qlik. This ensured the team would have a copy of all the transactional data from the old system for archive purposes. It also allowed them to use Qlik to look for odd card numbers and transactions and then "clean" the data to remove any oddities. Accounts that were inactive for one year or more, per existing policies, were identified and also excluded from the migration. The team then looked for balances on active accounts that the department determined would remain and should be included in the migration. Using Qlik the team was able to analyze data and break down balances. Customer account history was reviewed as a way to ensure the detail and account balances were reasonable and correctly calculated. Finally, developing a new general ledger account was essential to preparing for the transfer of validated balances from the old system to the new system. This provided greater reconciliation transparency between the system and the general ledger balances. The team worked with the Auxiliary Marketing office to place signage at registers prior to the transition. This ensured customers were made aware of the

potential for service interruption and had information at the registers in the event that they did experience an issue with their transaction. Once the data had been cleaned, testing was complete, and communications were in place, the team was ready to conduct the live data migration.

Migration Process

The actual migration of data took place on June 15, 2017. The migration was purposely scheduled to occur during the summer because the student population (and therefore account balances) is lower than it is during the fall semester. During the summer, for instance, account balances equal around $500,000 as opposed to millions of dollars during a fall semester. Since some UGA retail dining locations remain open until midnight, the team chose to wait until midnight to begin the migration to reduce impact on individuals making transactions. After midnight, the team flushed the system to remove all practice tests previously conducted and turned off the old card management system. They then loaded the "cleansed" data which amounted to 61,924 accounts (decreased from the initial 87,660 in the old system) into the new card management system. The cleansed data contained visitor cards, active balances, and balances that had not yet expired due to inactivity. Departmental policy mandates that accounts are not closed until they have been inactive for one full year. After the data was loaded, the team compared the total balances of all accounts using reports from the old system, reports from Qlik, and reports from the new system. This ensured the balances after import matched what had been in the old system. This whole process only took an hour and a half. Once campus returned to normal business hours, the team began running reports in the new system against campus vendor reports to verify transactions in the new system were being recorded successfully. It was also essential for the team to be prepared to run reports from the IRIS recognition camera system

against reports from the new card management system to ensure there were no inaccuracies in patron identification after implementation.

Benefits

Identifying Qlik as the software solution for this project was a major benefit because it not only supported the goals of this project, but it also opened the door to improving additional processes within Auxiliary Services. Qlik gave the department the ability to instantly call up transaction data helping administrators and managers make decisions by analyzing campus trends and financial impacts. The software was key to guaranteeing a seamless transition by allowing staff to perform work without interrupting customers. Qlik reduced the physical amount of time it took to perform data reconciliations. Before Qlik, this particular reconciliation processes took more than two weeks to conduct. With Qlik, that time was reduced to an hour and a half. The project also provided benefits to the department itself. It built collaboration between IT, Dining administration, and accounting staff by highlighting strengths that were previously unknown. By working together, staff gained better insight on both sides that led to the generation of ideas for business process improvements where similar approaches in analyzing data can be applied.

Retrospect

Auxiliary Services undoubtedly would take the same steps to develop processes for the reconciliation of data again. During the data migration, the team leveraged software tools, namely Qlik, to place data right at their fingertips for review, analysis, and reconciliation. Taking advantage of the Qlik software, which contained real-time data, allowed for easier team collaboration as opposed to passing spreadsheet files around to individual team

members. This approach worked extremely well and gave ownership of the process to Auxiliary as a whole instead of creating silos among specialized teams within the department. Going forward, Auxiliary Services plans to utilize similar practices for any future software system that require data migrations. In the near future, UGA is transitioning its financial systems to PeopleSoft. Auxiliary Services plans to take the lessons learned from working with data and preparing for reconciliation tasks and apply it to the PeopleSoft transition as it pertains to the department.

If other universities are faced with the need to reconcile large or small amounts of data, Auxiliary Services would advise that it is important to start as early as possible and test, test, test. Being able to hold practice sessions to gain confidence with the process was essential to the team's success. It is also recommended to collaborate with all key stakeholders. Since this process is highly technical, there is a temptation to make it an IT only project. Involving accounting and departmental managers was key to understanding the data and reducing errors. Also, take the time to "clean" data. Even if transitioning to a new card management system is not a priority, being able to periodically clean the data is helpful for reducing clutter and appropriately archiving records. Whether a university is undergoing a large-scale system transition or simply wants to improve daily business processes, the lessons learned by the University of Georgia and the implementation of Qlik as a data visualization tool are applicable. Bringing data visualization into the business process was a highly beneficial step for UGA and the same can be applied to other universities looking to bring business process improvements to their campus.

Pictured Below: Visual Representation of all account data from 2013 –2017
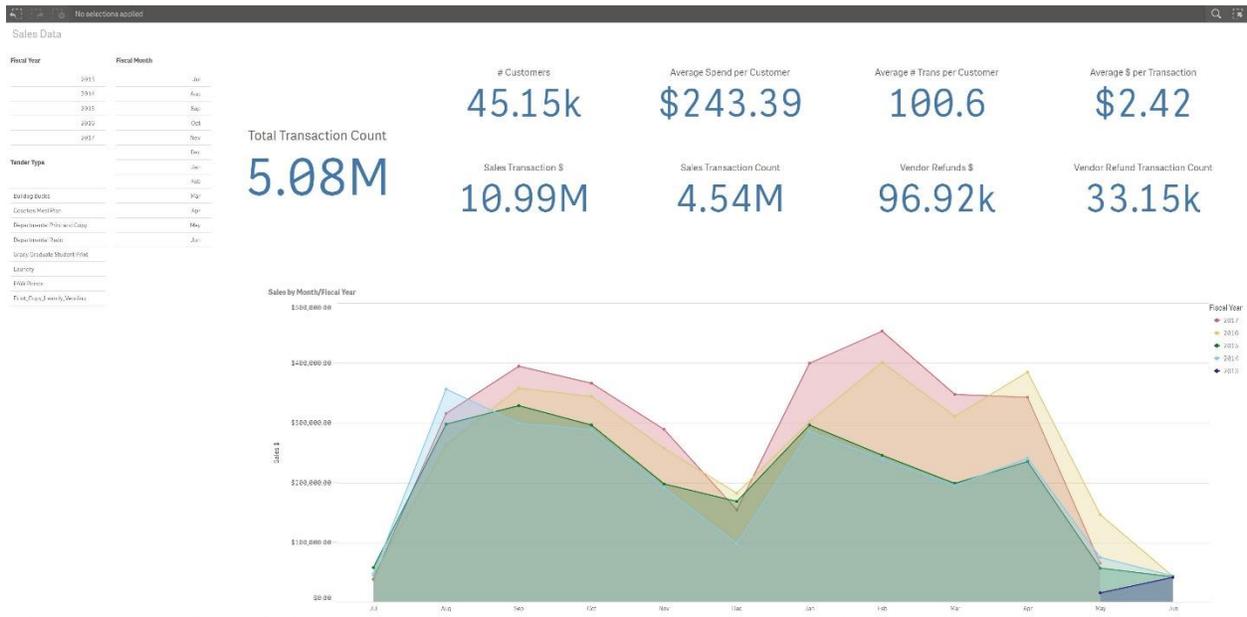
Pictured Below: Visual Representation of all Bulldog Bucks data from 2013 -2017
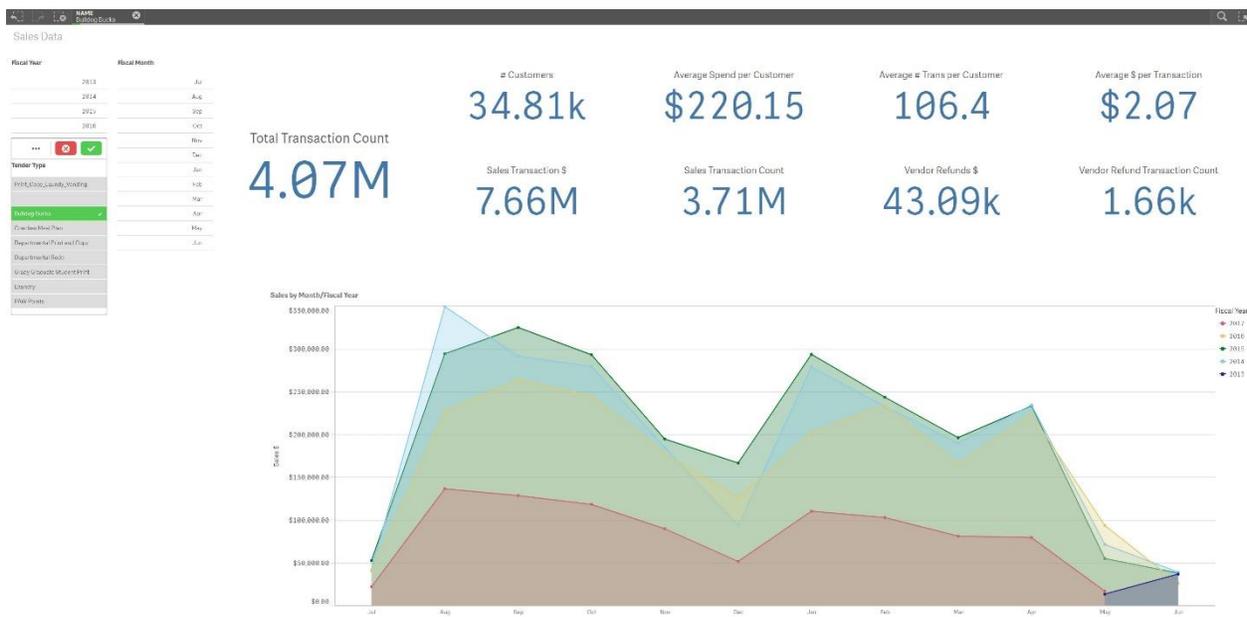
Pictured Below: Visual Representation of all Paw Points data from 2013 -2017

Pictured Below: Visual Representation of Print/Copy/Vending transaction data from 2013 –2017

Pictured Below: Visual Representation of Bulldog Bucks transaction data from 2013 –2017

Pictured Below: Visual Representation of Paw Points transaction data from 2013 –2017