



UC SANTA BARBARA
Information Technology Services

Annual Report

2022

A Year In Review

Executive Summary



The past year has been marked by tremendous change and growth within our organization.

The recent formation of Information Technology Services (ITS), an integration between Enterprise Technology Services and Student Information Systems & Technology, represents the completion of a three-year-long initiative. This integration will over time reduce complexity and duplication of processes, standardize practices and tools, build resilience for system and service support, provide growth opportunities for staff, and manage costs associated with the increasing demand for IT services. The tremendous support from staff in both IT units has made for an effective transition into one central IT organization.

Throughout this transition, our efforts to support the campus' mission through the application of effective and innovative technology have continued apace. ITS provided PowerBI reporting and technical support for the COVID-19 early detection program, ensuring that UCSB's pandemic response team could make data-driven decisions in the return to full on-campus instruction. We coordinated with the Office of Research to assess and address security concerns, providing researchers with secure solutions for their data (including use of the Secure Computing Research Environment) and deploying encrypted email and secure Zoom environments. We streamlined administrative processes and enhanced workforce technologies through projects like the Concur implementation and Kronos time clock replacement, continued to enhance the operations of the North Hall Data Center, and maintained infrastructure that supports two-way radio communication for campus emergencies. From a massive internet cable repair to countless software migrations and upgrades to student-facing websites like the Student Health Services and Admissions Portals, ITS has continued to refine current systems and make the technology improvements that enable campus operations.

In my first year as CIO I'm honored to lead this new organization and look forward to building upon our strategic IT vision to provide UCSB with an environment that continues to enable excellence in teaching, research, and public service.

Thank you.

A handwritten signature in black ink, appearing to read 'J. Bright'.

Josh Bright, Ph.D.

Associate Vice Chancellor for Information Technology and Chief Information Officer
University of California, Santa Barbara

View the annual report online at:
www.cio.ucsb.edu/about/annual.reports

Accomplishments

Service Quality

Ensure the availability and reliability of core IT services

Los Carneros Fiber Repair

ITS staff constructed a new fiber-optic cable path after an incident in June 2021 caused extensive damage to UCSB's primary Internet connection. After quickly restoring network access to the campus, ITS undertook a larger effort to ensure the long-term stability of this connection as the previous route was rendered inaccessible. An entirely new route was completed on March 1, requiring coordination and collaboration with multiple entities, including the City of Goleta, Santa Barbara County, and the California Coastal Commission. Restoring the fiber cable was critical to maintaining a steady Internet connection and ensuring uninterrupted teaching, learning, and operations.

UCPath 2021 Upgrade

ITS completed a UCPath PeopleSoft Update Manager (PUM) upgrade in December 2021, advancing the UCPath production system to PeopleSoft version 9.2.37 and implementing many vendor-issued patches. UCSB was previously operating on version 9.2.17, the most recent version at the time of the systemwide UCPath launch in 2016. This upgrade improved stability, reduced support needs, and increased protection against compliance risks and security vulnerabilities in the system. Performing regular upgrades expands application functionality to further reduce manual efforts and eliminate inefficiencies.

Kronos Time Clock Replacement

After Kronos, the campus' timekeeping application, announced that UCSB's previously utilized time clock model would no longer be supported, ITS planned an installation of 63 new time clocks over four months. The outdated clocks were replaced with InTouch DX model time clocks, which retained similar features and allowed for minimal disruptions to customers.



Accomplishments

Service Quality

Zoom and DocuSign Usage

Although the UCSB community returned to in-person instruction in September 2021, ITS continues to support applications such as Zoom and DocuSign. There were 712,266 Zoom meetings hosted over the past fiscal year, a 45% decrease from 2020-21. However, Zoom utilization remains drastically higher than pre-pandemic levels as there were only 35,107 meetings hosted in 2019. Additionally, average monthly DocuSign usage increased from 14,102 envelopes sent per month in 2021 to 15,624 sent per month in 2022 as additional departments began finalizing agreements electronically. Working with these vendors to deliver updates and enhance features allows for continued flexibility on our campus in today's hybrid environment.

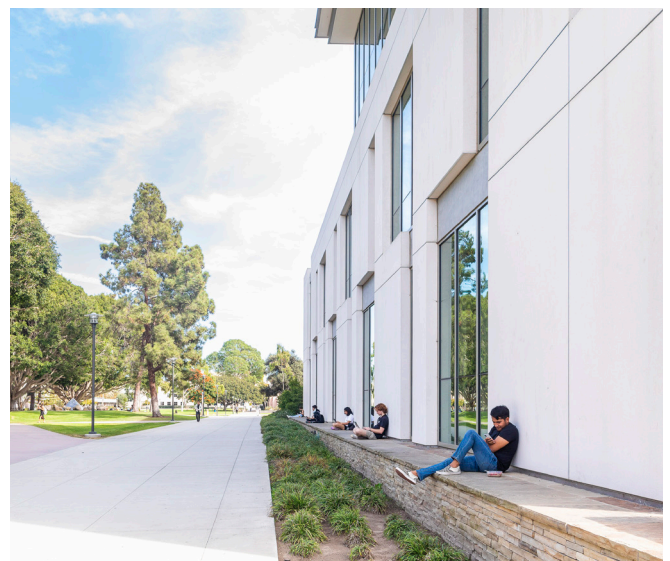


Sitefinity to Drupal Conversions

ITS helped convert 13 campus department websites from the former Sitefinity software to the Drupal cloud-hosted content management system, including sites for the Alcohol and Drug Program, Student Health Services, Student Mental Health Coordination Services, and Veterans and Military Services. A cloud transition improves campus information availability as sites will not be impacted by local network or service outages. Additionally, Drupal improves the usage and functionality of the UCSB visual brand for website content managers and provides increased security with regular vulnerability patching.

Freshman Admission Decision Release

On March 22, almost 111,000 freshman applicants logged on to the Applicant Portal to view their UCSB admission decision, with peak levels of traffic reported at 9,600 concurrent users and 400 website requests per second. In preparation for the anticipated increase in website traffic, UCSB ITS coordinated several rounds of testing to optimize the steps for enrollment, transcript submission query, and payment processing. In addition, a standby team consistently monitored application infrastructure and performance on release day. Providing a seamless process for the admission decision, which is often a new student's first interaction with campus technology, demonstrates UCSB's commitment to a high-quality student experience.



Accomplishments

Service Quality

Beach Coverage for 800MHz Radio System

ITS Communication Services manages the 800MHz frequency for two-way radio communication, primarily serving the University Police Department. ITS coordinated with Motorola to install a 3.5DB antenna with a three-degree down tilt on top of the Library, allowing for radio access on the beach that was previously unavailable with the original 10DB antenna. New radio coverage spans from Henley Gate (east gate) to Coal Oil Point. By advancing our emergency communication capabilities, UCSB ITS continues to support campus law enforcement and promote safety in our community.



Improving Cold Air Delivery in North Hall Data Center

The North Hall Data Center (NHDC) is a resource for hosting IT system servers across UCSB's academic, administrative, and research communities. ITS' installation of a cold aisle containment system into all server racks in September 2021 stabilized the performance of cold air delivery to NHDC servers, reducing the occurrence of substantial temperature swings in the data center and decreasing energy expenses. There was only a 1.5-degree difference between average high and low NHDC temperatures from September-December 2021, a range more stable than the 13.5-degree average difference observed over months prior. Performing regular improvements to the NHDC supports reliable, secure, and high-quality infrastructure while contributing to the University's mission of increased environmental responsibility.

Accomplishments

People

Recruit, develop, and retain our talented workforce

IT Internship

The second cohort of interns participated in the IT Internship Program in FY 2021-2022, providing six undergraduate students with hands-on experience in various IT units and preparing them for future careers in technology. The Office of the CIO also began scoping a new component of the program, a fellowship that offers one graduate of the Internship Program two years of employment to gain broad exposure to various IT services, systems, and processes within the campus community. Retaining an intern for this post-graduate position supports both employee engagement and the commitment to undergraduate students' professional growth.



ETS and SIS&T Integration Planning

Leaders from Student Information Systems & Technology (SIS&T) and Enterprise Technology Services (ETS) collaborated for the entirety of FY 2021-2022 to plan a major integration of their organizations. The integration was designed to eliminate redundancies and pain points, offer increased growth opportunities to staff, and consolidate costs for various site licenses, hardware, and software, all of which reduce the complexity of systems and increase their resiliency. Efforts included drafting a space utilization plan, finance plan, and Memorandum of Understanding (MOU) with Student Affairs, as well as updating an existing MOU with the Graduate Division. Integration planning also entailed the design of a new, combined organizational structure and Student Affairs governance structure. Through integration, the new Information Technology Services organization will leverage consolidated campus IT resources to support major system implementations while continuing to provide services to all current constituents within Student Affairs and the broader campus community.

Accomplishments

People

Lean Six Sigma Training

Lean Six Sigma (LSS) training is a continuous improvement method that teaches UCSB staff to reduce waste, streamline processes, and increase efficiencies. In July 2021, the Office of the CIO expanded this program to include Yellow Belt training, an ideal starting point for those ready to tackle inefficient processes with less time commitment compared to the Green Belt training. ITS also offered two problem-solving workshops in Spring 2022 for those who wanted to continue their Lean Six Sigma learning after Yellow Belt training. By offering LSS training to staff across campus, ITS aims to support the University's workforce development and retention, and assist departments in improving processes by utilizing a common vocabulary.



CIO and CISO Recruitments

The University successfully recruited two key leaders for the campus community in 2022. First, a rigorous national search resulted in the hiring of Dr. Josh Bright as Associate Vice Chancellor for Information Technology and Chief Information Officer (CIO). He joins the UCSB campus after working in multiple positions at UC Riverside for almost 20 years, where he recently served as Interim Associate Vice Chancellor and Chief Information Officer. The second search was for a Chief Information Security Officer (CISO), which ran concurrently with the CIO search. Emilio Valente joined the ITS organization as the CISO and Director of Information Assurance, bringing over 20 years of extensive IT and cybersecurity experience with over a decade in the UC system.

Accomplishments

Data Liberation

Provide decision-makers access to institutional data

COVID-19 Early Detection & Mass Testing Program

The COVID-19 early detection and mass testing program began in Fall 2021 as part of UCSB's pandemic response, requiring test samples from members of the student population at random to estimate transmission rates across the campus community. Several ITS employees provided technical support to the campus testing center, including system infrastructure support, ordering tests, result management and processing, and physically migrating the testing site from Loma Pelona to Building 434. Supporting the technology behind this program assured that leaders had access to accurate data and were equipped to make informed decisions about the health of our community throughout the pandemic.



Power BI Transition to Campus Instance

Power BI interactive data visualization software was used in duplicate instances on the UCSB campus, causing redundant administration and support. In the past year, ITS collaborated with IT staff throughout campus to transition the previous "my.ucsb.edu" Power BI instance to the campus' primary "ucsb.edu" tenant. Each major IT unit worked to define service requirements that meet the broad needs and use cases across campus, including selecting licensing options, defining the Power BI tenant-level setting requirements, and creating IT unit-specific Azure Active Directory (AD) groups. This transition decreases unnecessary costs, risk, and governance complexity for this service.

Accomplishments

Data Liberation

DETAiL Pilot

DETAiL (Data-Enhanced Teaching and Learning) is a collaboration between UCSB's Center for Innovative Teaching, Research, and Learning (CITRL) and the ITS Data Services & Business Intelligence team that provides tools to help faculty better understand their students' demographic and learning experiences so that they can tailor teaching based on that data. During the past fiscal year, the project team delivered the [DETAiL website](#) and piloted reporting tools that regularly analyze data from Gaucho Blue and GOLD. Providing faculty with secure access to accurate demographic information assists the development of equitable and effective teaching strategies and facilitates decision-making that supports instructional initiatives on campus.

Information Assurance

Ensure the confidentiality, integrity, and availability of information assets

Multi-Factor Authentication

In the past fiscal year, ITS integrated Duo/MFA with 43 campus applications, including Kronos Timekeeping, the campus Virtual Private Network (VPN), Zoom, ServiceNow, the Data Warehouse, and BARC. One of the most significant accomplishments was the high uptake in usage amongst the student population after requiring MFA for the Student Health Services (SHS) Portal. The SHS Portal was used to complete the mandatory COVID-19 daily symptom survey and therefore frequently accessed by students on campus. After the MFA/SHS Portal integration on January 25, Duo enrollment increased from 16,545 students to 24,639 students, a 30.8% increase in just a few days. Expanding the scope of the MFA implementation increases the security of these key services and helps to protect critical university, employee, and student data.



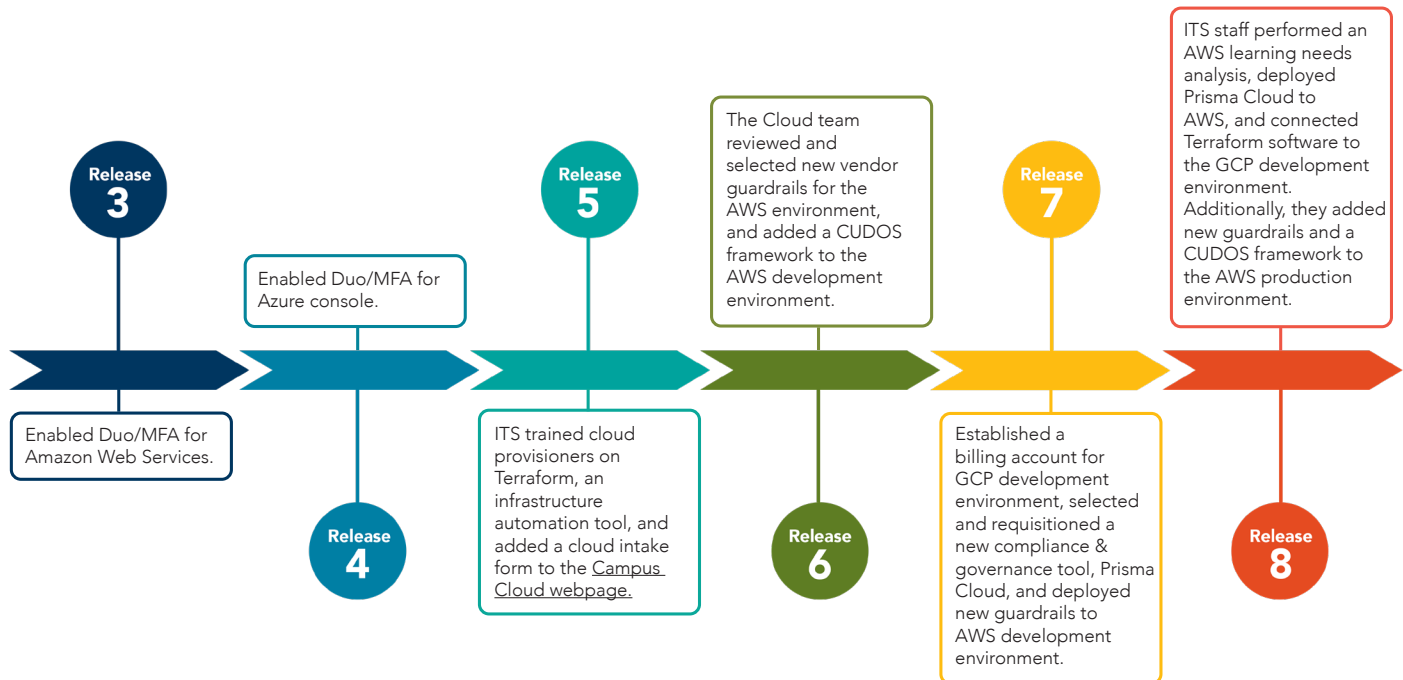
Accomplishments

Campus Cloud

Leverage cloud technologies while controlling infrastructure costs

Campus Cloud Update Releases

ITS worked diligently to increase the usability and security of Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform, with six update releases for these services in the last fiscal year. The Cloud & Identity team made continuous progress in security and governance, applying Duo/MFA to both AWS and Azure, adopting new guardrails (vendor-provided security tools), and selecting new compliance and governance tools for these platforms. A Cloud Intelligence Dashboard (CUDOS framework) implementation improved customer visibility into AWS costs and budgeting. Additionally, ITS performed an AWS learning needs assessment and expanded workforce training, providing AWS Associate Solutions Architect training to 30 staff members across campus and training cloud provisioners on Terraform, an infrastructure automation tool.



Accomplishments

Digital Transformation

Create new processes, culture, and experiences to meet today's consumer demands

Get Off The Mainframe

On June 15, the mainframe was turned off for all campus applications, retiring a 50-year-old infrastructure asset and marking the completion of an effort that began in 2019. By transitioning all UCSB enterprise systems and data previously stored on the mainframe to the cloud, the University adopts a more efficient, flexible, and modern system for storing bulk data and processing transactions for critical applications.



Concur Travel & Expense Management

ITS partnered with Business & Financial Services to implement Concur, an application used to reimburse employee travel and business expenses, in February 2022. UCSB employees may now create their own expense reports and obtain automated electronic approval as opposed to the former paper-based process. Adopting this new application allows for reduced errors, portable receipt scanning and report creation via the Concur mobile app, travel credit card integration, and improved accountability and compliance.

Payroll and Personnel System Archive

In the previous fiscal year, ITS moved all pre-UCPath payroll and personnel data from UCSB's legacy Payroll and Personnel System (PPS) to the Amazon AWS cloud. Access to this data archive is limited to central Human Resources, Payroll, and Academic personnel staff, who supported quality assurance activities to ensure the correct migration of data. Migrating legacy PPS data was part of a larger effort to retire the mainframe, moving the University towards a modernized system for storing and archiving data.

Accomplishments

Digital Transformation

Financial Management Modernization

Financial Management Modernization is an ongoing program led by Finance & Resource Management and managed by the ITS Program Management Office that aims to transform UCSB's financial management capabilities by adopting a UC-mandated Common Chart of Accounts (CCOA) and new financial system software, Oracle Financials Cloud, in July 2024. Scoping for the program concluded in late 2021 and, following the kickoff in February 2022, 79 staff members from various departments across campus began work to design the new system. Historically, UCSB's current PeopleSoft Financials system has been oriented toward central offices and UC Office of the President (UCOP) reporting, and has not always met the financial reporting and management needs of campus units and projects. Elements of the new system will make it easier for all levels of organizational units to create budgets, categorize transactions, analyze, plan, and manage their financial accountability.



Undergraduate Admissions TargetX to Slate Migration

Slate is an application used to manage all outreach efforts, communications, and Visitor Center tours and events for the 200,000+ prospective students that the Office of Admissions interacts with each year. In September 2021, ITS migrated all admissions data from TargetX to Slate. The new system supports scheduling outreach staff for visits at high school and junior college fairs, gathering inquiries, sending emails and text messages to thousands of prospective students weekly, tracking interactions with prospective applicants, and coordinating registration for hundreds of events each month. This initial migration contributes to the overall goal of consolidating all Admissions processes into one system in order to provide a unified outreach process to prospective and admitted students.

By The Numbers

Accounts and Identity

Total campus identity logins	179,553,363
Active campus identities	54,158
Applications integrated with single sign-on	400

Collaboration Services

Total email messages delivered	125,911,063
Active Connect accounts	101,295
Websites hosted	553

Information Security

Connect accounts using MFA	47,338
Indicators of compromise detected by FireEye	554
Total incidents	211
Avg. monthly malware events detected by Sophos	123

Application Support

Service calls addressed	28,766*
UC Learning Center users	15,760
Kronos users	10,028
Kronos service requests	5,676
Total workstations supported	2,955*
Connect service requests	1,903*
UC Learning Center service requests	409

Virtual Application & Server Hosting

Gigabytes of RAM	15,129*
Gigahertz of CPU	3,555*
Terabytes of SAN storage	1,214*
CPU cores	924*
Virtual servers hosted (virtual machines)	855*
Virtual host servers	31*

Network, Remote Access Connectivity

VPN accounts supported	6,971
Wireless access points maintained	4,323
Active Secure Socket Layer certificates issued	718
New wireless access points installed	366
Subnets with access control lists supported	312
Building switches maintained	137
Petabytes transported on border routers	41.01
Percent network uptime at building switch	99.90%

Portfolio, Program & Project Management

it.ucsb.edu page views	645,798
it.ucsb.edu sessions	405,092
it.ucsb.edu users	198,830
Projects completed	128*

Physical Security

Security cameras hosted in VSaaS	214
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Data Center Operations

Physical servers hosted at the NHDC	643
Total racks at North Hall Data Center (NHDC)	69
Departments hosted in the NHDC	51

Telecommunications

Station-to-station calls attempted	1,546,929
Station-to-station calls completed	784,405
Outgoing calls processed annually	588,426
Telephone lines maintained	5,517
Work orders and trouble tickets created	1,458
Radio service customers	455
Miles of outside plant fiber optic cabling maintained	68.5
Miles of outside fiber optic cable installed	3.3
Miles of copper cable installed	0.69

Palo Alto Unified Threat Management Blocks

Total threats blocked	616,742,160
Total vulnerabilities blocked	282,685,044
Total URLs blocked (PAN-DB)	181,281,063
Total spyware blocked	177,074,499
CVSS high vulnerabilities (since July 2018)	87,902,985
CVSS critical vulnerabilities (since July 2018)	36,256,977
Total scans blocked	6,495,380
Total files blocked (virus)	746,839

Zoom Adoption and Usage

Total Zoom meeting minutes	42,069,966
Number of participants	6,279,543
Number of meetings	712,266
Total Zoom accounts provided	51,714

Google Drive & Gmail Storage

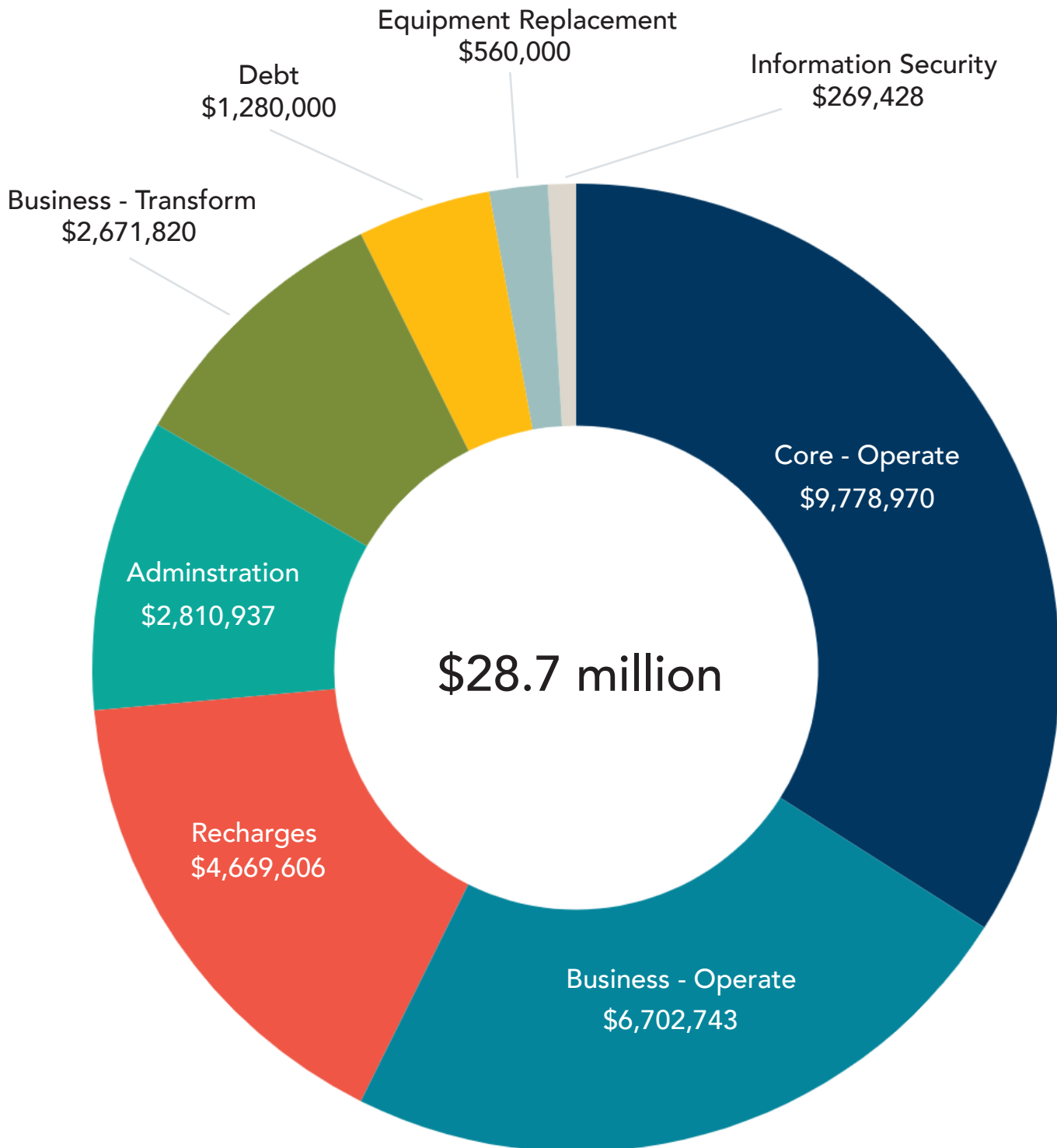
Total megabytes used	3,400,897,221
Megabytes of Drive used	3,199,471,668
Megabytes of Gmail used	158,349,588

Training

LinkedIn Learning hours (campus)	2,297
Pluralsight learning hours (campus)	419
Total Lean Six Sigma Yellow Belts on campus	214
UC Managing Implicit Bias series completions (campus)	122
Total Lean Six Sigma Green Belts on campus	57
UC People Management series completions (ITS)	27
UC People Management series certificates (ITS)	24

*These numbers reflect combined FY 2021-22 data from Enterprise Technology Services and Student Information Systems & Technology.

Expenditures



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